INDEX ON PAGE 22

USINESS WEEK

INDEX YEAR AGO

Conrad Hilton: With 37,000 rooms, a hotelier can make money (page 186)

A McGRAW-HILL PUBLICATION

SEPT. 18, 1954

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"

National Accounting Machines save us $96,000 a year... return 89% annually on our investment!"

—**STATE FARM INSURANCE COMPANIES,*** Bloomington, Illinois
"First in Automobile Insurance"

"A constant search for the most efficient accounting procedures is an important part of our business.

"To obtain this efficiency, we invested $109,000 in National Accounting Machines. They have returned amazing dividends. Nationals now save us $96,000 every year—a return of 89% annually on our investment.

"Careful attention to such administrative details and operating costs helps us assure safe, low cost insurance and maintain our position of *'insuring more automobiles than any company in the world.'"*

Leslie H. Rusch
President
State Farm Mutual Automobile Insurance Company

JOBS HANDLED:

Writing all disbursements
Returned check reports
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Agents earnings records
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**State Farm Mutual Automobile Insurance Co. • State Farm Life Insurance Company • State Farm Fire and Casualty Company*

In your business, too, National machines will pay for themselves with the money they save, then continue savings as annual profit. Your nearby National man will gladly show how much you can save — and why your operators will be happier.

THE NATIONAL CASH REGISTER COMPANY, DAYTON 9, OHIO
949 OFFICES IN 94 COUNTRIES

National

RESEARCH KEEPS **B.F.Goodrich** FIRST IN RUBBER

Steel doors drink water to keep from burning up

A typical example of B. F. Goodrich improvement in rubber

INSIDE that steel mill furnace it is 3,000 degrees hot. The furnace wall is protected by thick fire brick, but the door has to be steel. Of course it would melt in minutes, so they make the doors hollow and pour cold water through in a constant flood.

But the door moves up and down, so flexible hose is needed to feed water in and out. Hot metal spatters on the hose. Big "charging machines" bang it. Heat cooks it.

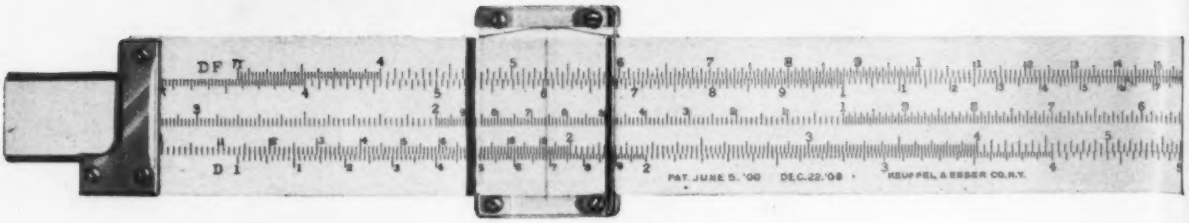
Rubber stand all *that?* B. F. Goodrich believed it could, and designed a rubber hose armored with wire for strength, and protected by asbestos for heat. The B. F. Goodrich hose you see here has already lasted four times as long as hose used before. And it is so much lighter, more flexible than other makes of hose that workmen prefer it, and one man can install it where two were needed for other hose.

Product improvement at B. F. Goodrich goes far beyond ordinary "specifications". That's why specifications don't tell half the story when you're comparing with B. F. Goodrich.

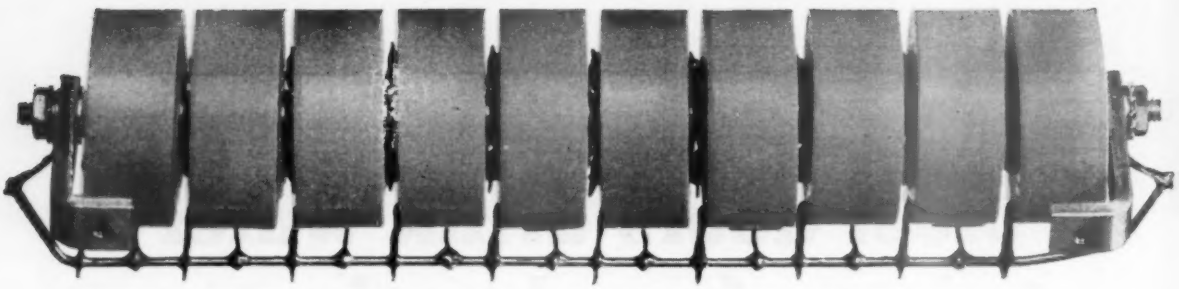
Some B. F. Goodrich improvements are big, spectacular; some are little; many are too technical to explain easily, but all save you money. Every product gets its share—hose, V belts, every kind of conveyor belt, hundreds of others. None is ever regarded as finished or "standardized". So don't decide any rubber product you use is the best to be had without first seeing your B. F. Goodrich distributor. Find out from him what B. F. Goodrich has done to improve it recently. *The B. F. Goodrich Company, Dept. M-296, Akron 18, Ohio.*

B.F.Goodrich
INDUSTRIAL PRODUCTS DIVISION

Where precision is essential . . .



industry turns to PLASKON® Alkyds



The Hewlett-Packard Company of Palo Alto, California, makes electronic measuring devices of exceptionally high precision. These are necessarily very sensitive instruments. So sensitive in fact, that in many cases expansion or lack of rigidity in a component part can cause serious errors in calibration.

Hewlett-Packard, having experimented with many materials, has found that PLASKON Alkyd (mineral-filled or glass-reinforced molding compound) is the *one* material that meets their exacting requirements.

Parts molded of PLASKON Alkyd are dimensionally stable, highly resistant to heat, moisture and arcing. They can be molded into shapes that would otherwise have to be machined. Unique in their field, PLASKON Alkyd molding compounds make better, longer-lasting products.

These, we believe, are sound reasons why *any* company engaged in the manufacture of any type precision equipment can benefit by using PLASKON Alkyds. Contact your Plaskon Man for complete information. He'll be glad to help you.

Barrett PLASKON®

For further information on PLASKON Plastics and Resins, address BARRETT DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y. Hanover 2-7300.

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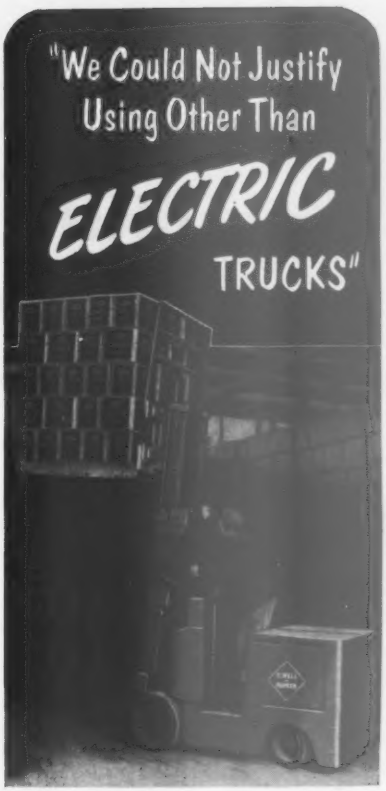


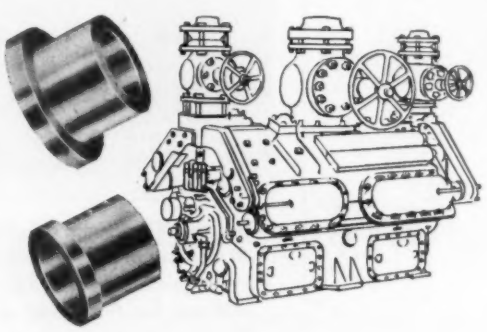
So says The Leslie Salt Co., users of all types of power in their equipment producing 200,000 tons of salt per year. But handling of packaged salt in their plant is done exclusively by Elwell-Parker *ELECTRIC* trucks. Leslie Salt knows by experience that fume-free E-P electrics are usually less expensive to operate and maintain . . . Elwell-Parker makes trucks with *ALL* motive powers—electric, gas-electric and gas. Each has its advantages under certain operating conditions. For unbiased and *experienced* advice about which is best for your needs, consult Elwell-Parker.

FREE CATALOG

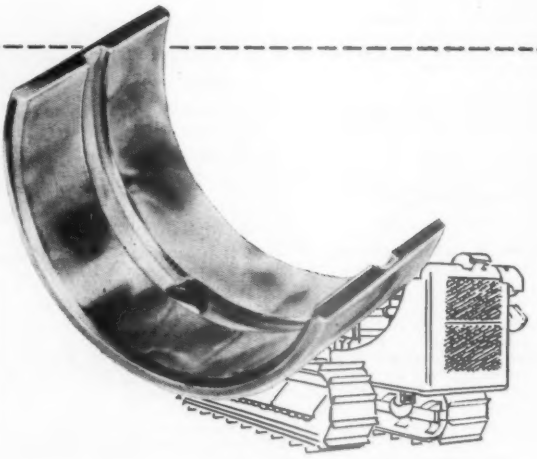
describes over 80 sizes and models of trucks, explains advantages of each type. Write The Elwell-Parker Electric Co., 4010 St. Clair Avenue, Cleveland 3, Ohio.

ELPAR
INDUSTRIAL TRUCKS

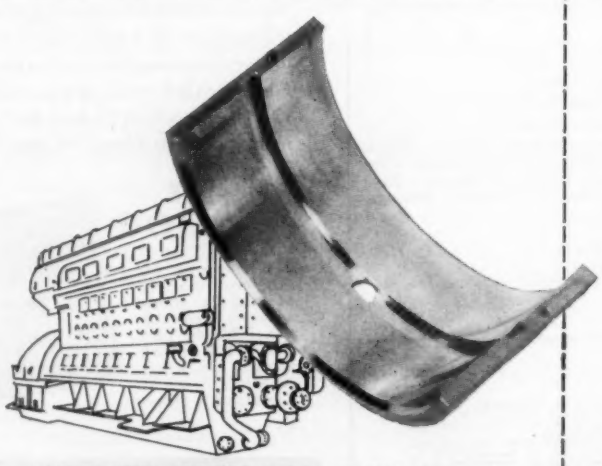
Suppose, like these designers, you just want to eliminate trouble



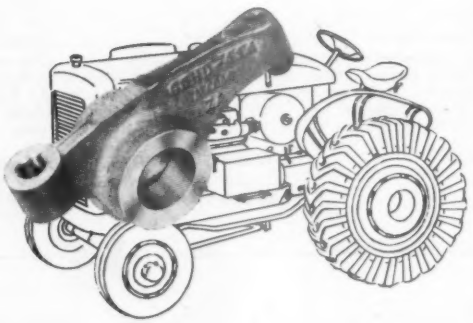
YORK CORP.—use sleeve-type load and thrust bearings of cast aluminum alloy that last 20,000 hours and more. They solve service problems, carry heavier loads, are easier to machine, prevent shaft damage.



CATERPILLAR TRACTOR CO.—use solid aluminum for main connecting rod and thrust bearings in their tractor. In addition to longer life, the solid aluminum bearings showed a much lower percentage of failures than previously used materials.



FAIRBANKS, MORSE & CO.—switched from steel-backed or bronze-backed babbitt to solid aluminum for crankshaft bearings. They report an increase of at least 10 times in bearing life, with added advantages of corrosion resistance, freedom from shaft damage and reduced rotating weight.



SCHRAMM, INC.—use an entire rocker arm cast of Alcoa Aluminum bearing alloy. They avoid costly forging dies for steel arms and costly machining necessary for conventional bushing inserts.

● There were three points in manufacturing history when designers could have demanded 24-karat gold for bearings. It happened once during World War I, when the Liberty Engine was born. Again when the Luftwaffe became the scourge of World War II skies. It happened when Rolls Royce built their Bentley automobile for millionaires.

What did these designers use when they could have demanded anything? ALUMINUM. And because of their early conviction that aluminum was the finest bearing material obtainable, scores of companies today are switching to solid aluminum bearings.

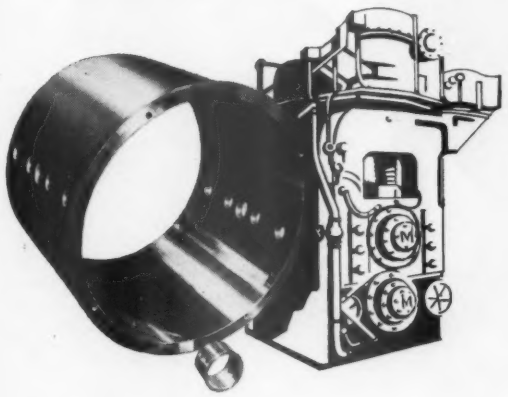
What do they get from aluminum that neither babbitt nor bronze nor any multimetalic combination offers? *No bond problems.* One-piece aluminum bearings *take tremendous loads* without failure.

Where additive oils are used, these engineers specify aluminum, knowing its *natural corrosion resistance* protects them. Where hot spots are likely, they know aluminum's *swift thermal conductivity* lessens seizures. Where dirt is a problem, they know aluminum *embeds particles* almost as well as babbitt —far better than bronze.

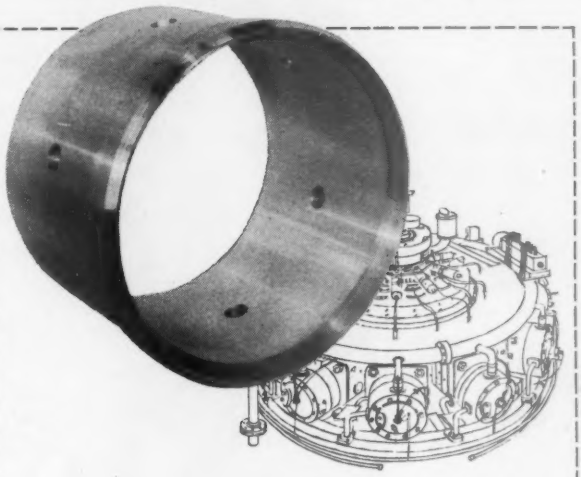
Who will be next to quadruple the life of his bearings? It could be the man who fills out the coupon below.

ALUMINUM COMPANY OF AMERICA
2193-J Alcoa Building, Pittsburgh 19, Pa.
Gentlemen: I would like to discuss aluminum bearings with an Alcoa sales engineer.
Name_____ Title_____
Company_____
Street and Number_____
City_____ Zone_____ State_____

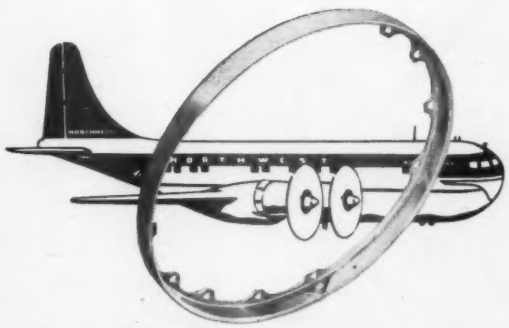
ALCOA ALUMINUM
ALUMINUM COMPANY OF AMERICA



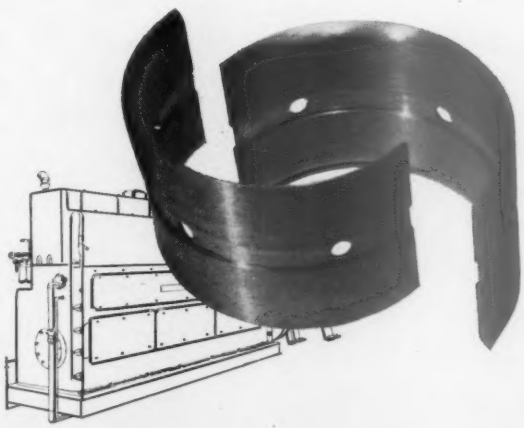
MORGAN CONSTR. CO.—use solid aluminum for their Morgoil Roll Neck Bearings in rolling mills. They report longer life than previously used steel-backed cadmium bearings, better corrosion resistance, better performance at high and low speeds on both hot and cold mills.



NORDBERG MFG. CO.—use full, round, solid bushings of Alcoa® Aluminum. They prove far superior to babbitt—give longer life—lessen maintenance interruption. Over 20,000 operating hours without failure.



PRATT & WHITNEY—needed a bearing material to withstand the sliding action of steel on their cam bearing. They used a solid aluminum bearing with excellent scuff resistance—saved 65 per cent weight—got better bearing performance.



INGERSOLL-RAND CO.—specified full floating bearings of solid Alcoa Aluminum for main connecting rod and thrust bearings. Results: longer life and lower cost than steel-backed babbitt, no spoiled crankshafts.

GENERAL ELECTRIC

Burned-out plant re-equipped fast to minimize production loss

A raging fire recently burned out a large industrial plant, reducing machines to rubble. Management's first concern was to resume production quickly in new quarters. What resources could General Electric's Apparatus Sales Representative marshal to help?

Instantly and on many fronts, G-E engineering services were alerted. Service Shop specialists were on the scene at once. G-E Service Shops, working closely with customer and machinery manufacturers, repaired salvageable electric equipment in record time.

Within 24 hours, motor replacements for vital machine tools were pushed through G-E factories and on the way. A new 90-foot roller-hearth furnace, built from scratch at another G-E factory, was delivered and producing in only ten weeks. Additional G-E plants came through ahead of schedule with new control devices, dynamometers, other electric equipment.

Emergency service like this is one of many services available to you through G.E.'s Apparatus Sales Division. Maintenance Service and Field-Service Engineering help protect your equipment investment throughout the life of the equipment. In addition, General Electric Product Development, Application Engineering, Analytical Engineering, and Project Co-ordination assure that you will receive the right equipment properly applied and installed on schedule.

Whether you are a *direct user* of electric equipment or whether you *incorporate electrical components* in your product, your G-E Apparatus Sales Representative can put these engineering services to work for you. Contact him early in your planning. Meanwhile for the full story on G-E engineering services, write for brochure GED-2244 to General Electric Co., Section 672-13B, Schenectady 5, N. Y.

GENERAL ELECTRIC

THESE G-E ENGINEERING SERVICES HELP PROTECT YOUR EQUIPMENT INVESTMENT

PRODUCT DEVELOPMENT provides improved equipment to meet tomorrow's increasing demands

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MAINTENANCE SERVICE helps keep your plant electric equipment operating at peak efficiency

PROJECT CO-ORDINATION simplifies purchasing, plans deliveries to speed construction schedules

FIELD-SERVICE ENGINEERING facilitates equipment installation, expedites start-ups, helps train personnel for proper operation

ANALYTICAL ENGINEERING solves complex system problems, cuts time used in system design

PRESIDENT TELLS WHY HE PUT FARVAL IN FOUNDRY:

"We invested $5,186 to save $15,000 per year"

THIS statement by a Detroit manufacturer reviews his experience with Farval Centralized Lubrication:

"A year ago we completed a lubrication survey in our foundry. It enabled us to reduce to twelve the number of oils and greases stocked. Even more important, it has resulted in a preventive maintenance program which reduced downtime by 34% in a 6 months' period. To illustrate the importance of eliminating foundry downtime, if one final assembly conveyor or a feeder conveyor breaks down, it immediately idles several hundred production workers. With our planned lubrication program now functioning, downtime averages under 7/10 of 1% of the standard production labor hours.

"A major item in our program was the installation of Farval Centralized Lubrication Systems on our molding machines. 26 machines, each with 7 points of lubrication, were protected at an equipment cost of $5,186. The savings in oil alone this year exceeds $15,000. In short, the Farval systems paid for themselves in less than 5 months—this without figuring the labor saved or the bearing expense and downtime eliminated."

This experience of a major manufacturer confirms that of literally thousands of other industrial plants, proving that Farval Centralized Lubrication brings these six benefits: (1) It eliminates downtime for bearing replacement; (2) it reduces bearing expense; (3) it saves lubricant; (4) it eliminates hand oilers; (5) it makes lubrication safe; (6) it permits lubrication while machines are running.

FARVAL is the foolproof Dualine system of centralized lubrication that delivers a measured amount of clean lubricant at regular intervals to every bearing. From a central station, lubricant is pumped under pressure to a measuring valve at each bearing, delivering the exact amount required.

FREE LUBRICATION SURVEY

Let us send one of our lubrication engineers to inspect your plant equipment. Without obligation, he will present a written analysis of what Farval can do for you. Write also for Bulletin 26 for more details.

The Farval Corporation

3284 EAST 80th STREET • CLEVELAND 4, OHIO

Farval is an affiliate of The Cleveland Worm & Gear Co., Represented in Canada by Peacock Brothers Limited

READERS REPORT

Read Closely

Dear Sir:

Your Personal Business section is a readable and often very helpful section of BUSINESS WEEK.

However . . . in the July 24 issue, on page 128, you say that all sunglasses are made to "rigid" specifications of the U. S. Bureau of Standards. There are two sets of specifications: one for the finer "ground and polished" lenses, and the other for the cheaper "blown, drawn, and dropped" lenses. Millions of unnecessary headaches are due to sunglass lenses which distort what the wearer sees, just as many window panes made a generation ago do. There are marked differences in quality of sunglass lenses, and they are highly significant to the purchaser.

In referring to prescription sunglasses, BUSINESS WEEK says: "Check with your oculist first to make sure your prescription is still the same." What about the more than 60-million Americans who obtained their prescriptions from optometrists? Optometry, the only profession specially trained and licensed in vision care, prescribes 75% of all eyeglasses in the United States.

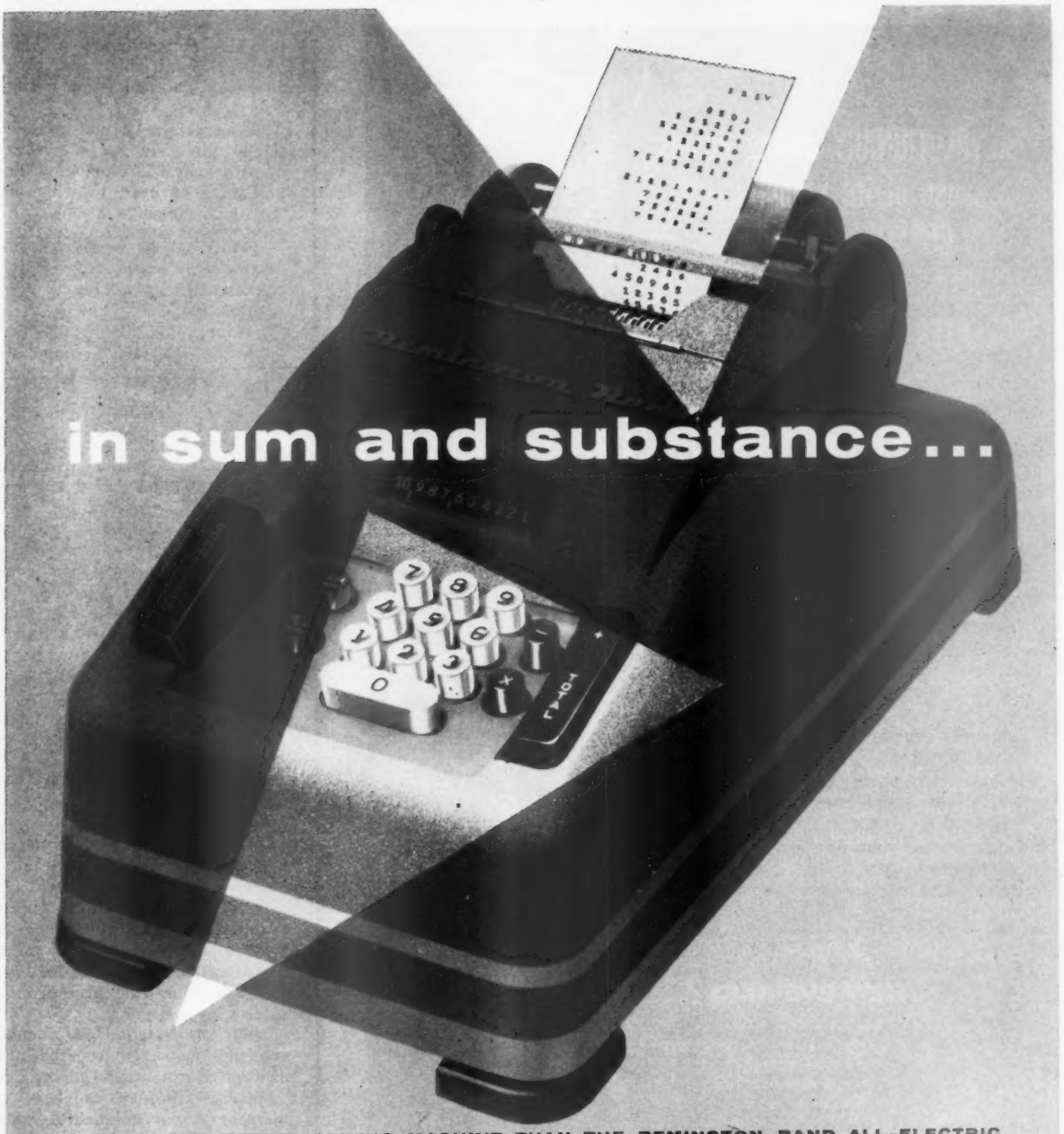
In the July 31 issue, there is reference again to the "oculist" as the source of information on contact lenses, with no reference to optometry, although it is to the optometrist that most Americans go for contact lenses as well.

. . . In the Aug. 7 issue, the "oculist" (or ophthalmologist) is specifically recommended over the the optometrist because "he examines back of the eye into the retina to determine your general eye health—which is important for your total well-being."

A pathology examination is a standard part of every eye examination whether performed by an oculist or an optometrist. Optometrists and oculists alike find that about 7% of all vision patients require special attention for pathology. . . .

It is highly desirable that executives should be urged to have periodic complete physical checkups. Such checkups should include a thorough examination for pathology revealed in the eye, and if such an examination is not made, the physician has neglected his responsibility.

That being the case, the executive should go to the optometrist



THERE IS NO BETTER ADDING MACHINE THAN THE REMINGTON RAND ALL-ELECTRIC

To SUM, or list, the simplified 10-key keyboard makes possible fast, accurate touch-method operation. In SUBSTANCE, the clear, easy-to-read 2-color tape provides both the perfect means of checking accuracy, as well as a permanent record of figurework accomplished.

For complete information, write for booklet No. AD567.

Remington Rand INC

ROOM 1999, 315 FOURTH AVENUE, NEW YORK 10, NEW YORK.

REVOLUTIONARY among liquids because of its stability, DOW CORNING 200 SILICONE FLUID CREATES NEW PRODUCTS
FOR EXAMPLE: One year after they were introduced by Dow Corning, release agents made with our silicone fluids were almost universally used in the rubber industry to reduce scrap, improve finish, cut mold maintenance costs by as much as 90%.
Performance of radar and other electronic devices is improved by Dow Corning 200 Fluid as a liquid dielectric in capacitors and transformers.
Now, less than 3 years after Dow Corning proved the usefulness of silicone fluids as polishing agents, most of the best automobile and furniture polishes are made with these new materials.
Reliability and accuracy of automobile and aircraft instruments, overload relays, circuit breakers, torsional vibration dampers have been increased by Dow Corning 200 Fluid as a damping medium.
As a water repellent treatment for vials and bottles, Dow Corning 200 Fluid cuts waste, makes dosage of rare antibiotics more accurate.
Pour point below —60; flash point above 575 F.
Viscosity 50 times as constant as petroleum oil at temperatures from —15 to 250 F.
Dielectric constant and power factor relatively constant from —20 to 200 C at 10^2 to 10^9 cycles.
Highly water repellent.
Most durable, easy-to-apply polishing agent.
Most stable mold release fluids.
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SILICONES cut production costs; improve the performance and sales appeal of products ranging from polishes to radar. Mail coupon today for more information.
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for his routine vision problems, about 93% of which are correctable with lenses or vision training. . . .

The executive should go to his family physician for the variety of pathological ills, including those pertaining to eyes, to which the American executive is subject. . . .

J. HAROLD BAILEY
ADMINISTRATIVE DIRECTOR
THE AMERICAN OPTOMETRIC ASSN., INC.
ST. LOUIS, MO.

The Whys of a Merger

Dear Sir:

BUSINESS WEEK's Aug. 21 issue, page 56 . . . made a number of faulty deductions based . . . on what would appear to be a very slender understanding of the automobile industry. I am sure these were inadvertent—and as for understanding one of America's biggest businesses, you have shown enough penetration in the past to indicate this was an off week.

In your excellent analysis of Feb.6'54,p50, you pointed out that the formula for success in the automobile business is "integration and standardization." . . .

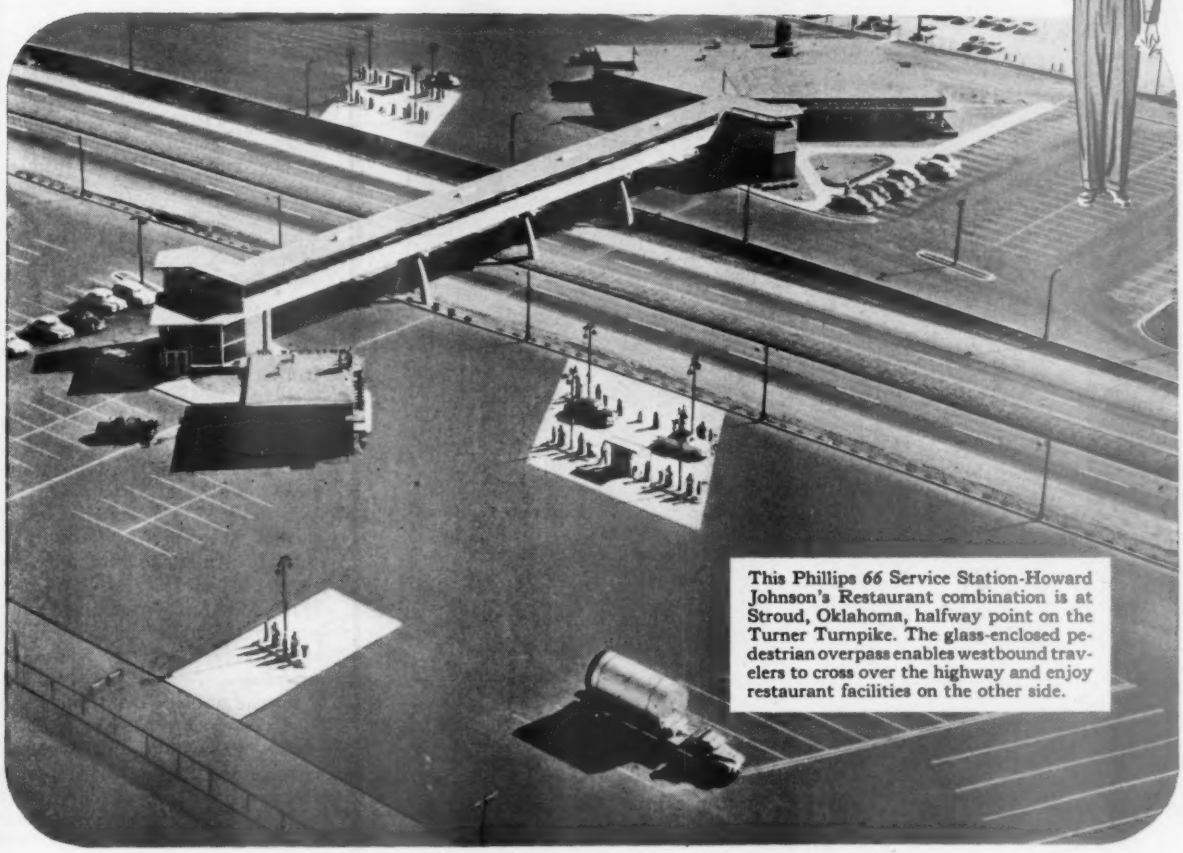
That is absolutely right. We confirmed it by our consolidation in May, and confirmed it again later in the month by announcing that we would concentrate our manufacture of automobiles in our Wisconsin plants. When competitive strategy makes it desirable, we will announce further moves in the direction of integration and standardization—the formula for success, as you put it.

Your story started out soundly enough: ". . . It's true that this concept of expansion (adding new companies through purchase or merger) is not unique to Studebaker-Packard among the new auto combinations. American Motors Corp. was established last spring with exactly the same idea. And it had a plus right from the start in being diversified; it has the Kelvinator line of appliances, and several divisions are major suppliers of auto and refrigeration parts."

Your next paragraph withered this bouquet by saying: "But AMC, in picking up Hudson, inherited so much debt that it will be a long time before the corporation will be in a position to make much progress . . . American Motors had to borrow $73-million to retire Hudson debts."

American Motors did not have to borrow $73-million to retire

Hospitality ON THE TURNER TURNPIKE



This Phillips *66* Service Station-Howard Johnson's Restaurant combination is at Stroud, Oklahoma, halfway point on the Turner Turnpike. The glass-enclosed pedestrian overpass enables westbound travelers to cross over the highway and enjoy restaurant facilities on the other side.

One of the nation's newest, most modern superhighways is the Turner Turnpike, connecting Tulsa with Oklahoma City, Oklahoma.

Here, on the longest stretch of turnpike west of the Allegheny Mountains, Phillips Petroleum Company operates six ultramodern service stations in combination with five Howard Johnson's restaurants.

Just as the new Turner Turnpike is a monument to the new era in motor transportation in the Southwest, so the stations which Phillips operates on the Turnpike exemplify the very finest in service and offer the finest products available to the motor traveler.

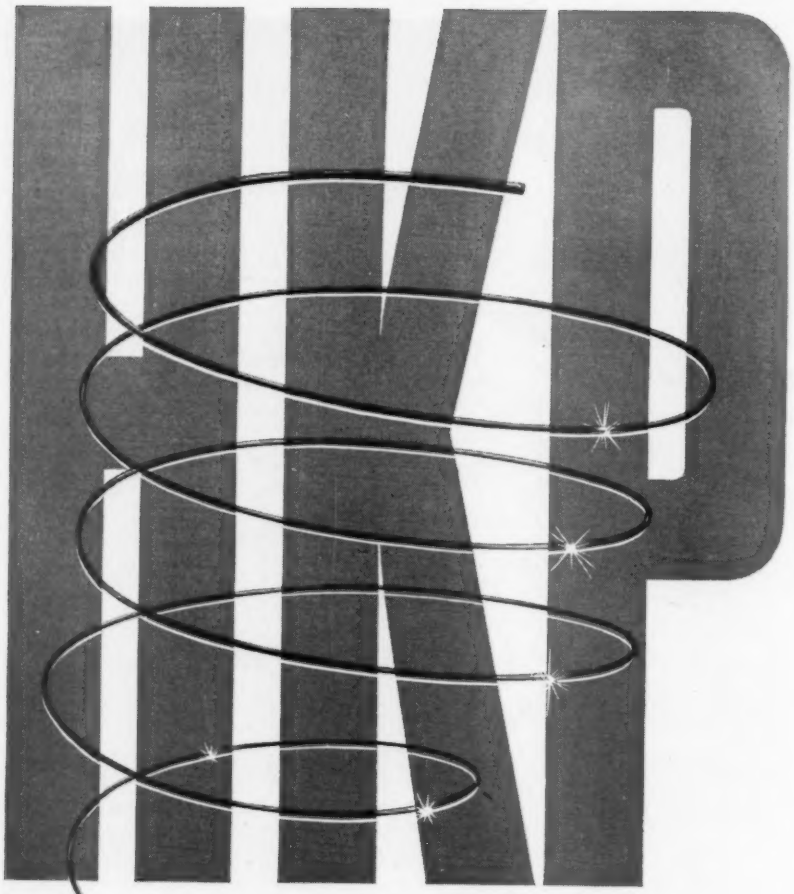
Continuously improved service, together with new and improved products that meet today's motoring needs, are what win new customers at Phillips stations and keep them coming back.

Phillips 66

PHILLIPS PETROLEUM COMPANY

Bartlesville, Oklahoma

We Put the Power of Petroleum at America's Service



Alloy Metal Wire is one of the ten divisions of H. K. Porter Company, Inc. It is a leading manufacturer of Wire, Rod and Strip, in stainless steels, nickel alloys, resistance alloys, and specially-formed wire shapes.

As in all divisions of H. K. Porter Company, Inc., the key word at Alloy Metal Wire is Service. Development engineers will assist in drawing specifications to meet conditions of fabrication and use . . . thus assuring the properties required for better end products.

Alloy Metal Wire, Rod, and Strip are bought with confidence by American industry. This is true of all products of the Porter Divisions.

The Porter group of manufacturing units:

ALLOY METAL WIRE, PROSPECT PARK, PA.
BUFFALO STEEL, TONAWANDA, N. Y.
CONNORS STEEL, BIRMINGHAM, ALA.
DELTA-STAR ELECTRIC, CHICAGO, ILL.
LESCHEN WIRE ROPE, ST. LOUIS, MO.
McLAIN FIRE BRICK, PITTSBURGH, PA.
PIONEER RUBBER MILLS, PITTSBURG, CALIF.
QUAKER RUBBER CORPORATION, PHILADELPHIA, PA.
THE WATSON-STILLMAN COMPANY, ROSELLE, N. J.
WATSON-STILLMAN FITTINGS, ROSELLE, N. J.

H. K. PORTER COMPANY, INC.

Executive Offices: Alcoa Building, Pittsburgh 19, Pa.

Hudson debts for Hudson borrowing was only $29,600,000 at the date of the merger. We merely assumed this Hudson debt as a liability of American Motors. The $73-million to which your article refers is the amount of our credit agreement with 28 large banks, and this we interpret as concrete evidence of the confidence which leading bankers have in this company.

A word further on this subject of debt, which your article infers is detrimental. Much of the Hudson debt was to finance its defense work—inventories of work in progress, accounts receivable from the government, etc. Nash-Kelvinator also owed its banks $40-million when the merger took place. Much of this, also, was due to its defense work. To finance projects which we know are of a temporary nature through short-term bank credits is both customary and wise. During the past four months, however, American Motors' bank indebtedness has been reduced by more than $25-million, and in this same period its inventories have been cut $30-million and cash and U. S. Government securities have been increased $6-million. American Motors' working capital at July 31, 1954, was $87-million. This figure does not include an additional $29-million of working capital of subsidiary companies.

Instead of being over-ridden with debt, American Motors is in a strong financial position which is very comforting at the moment. This, plus the diversification of its products in the automobile and electric appliance industries, and the strides that already have been taken to make our 1955 Nash and Hudson models competitive in every respect belie your statement that "it will be a long time before the corporation will be in a position to make much progress." The truth is quite to the contrary.

In another paragraph you say the Studebaker-Packard combination has the advantage of having non-competitive lines of cars, whereas Hudson and Nash are competitive.

Here is where you depart from the perspicacity you revealed in February by overlooking one of the most important reasons why the Hudson-Nash merger was a wise one.

The size and construction principles of the Nash Ambassador and Statesman and the Hudson Hornet and Wasp models make it possible for us to manufacture them in the same plants starting in De-

cember, at a large reduction in burden cost. Likewise, these features will permit great savings in tooling cost and from interchangeability of parts and components. These savings together, which will amount to millions of dollars annually, would be impossible to achieve if the Hudson and Nash lines were entirely dissimilar. . . .

G. W. MASON
CHAIRMAN & PRESIDENT
AMERICAN MOTORS CORP.
DETROIT, MICH.

• While it is true that American Motors did not draw down all of its $73-million credit, it did get $69.6-million of it to pay off $40-million Nash debts and $29.6-million Hudson debt.

A Bluebell!

Dear Sir:

That was a very fine article about our new plant in Scotland—IBM Dons Its Tartans . . . in the July 17 issue, page 120. . . .

The article is typical of the expert and accurate reporting for which BUSINESS WEEK . . . has built, and is continuing to build a well-earned reputation. . . .

THOS. J. WATSON
PRESIDENT
INTERNATIONAL BUSINESS MACHINES CORP.
NEW YORK, N. Y.

Distressed Baseball

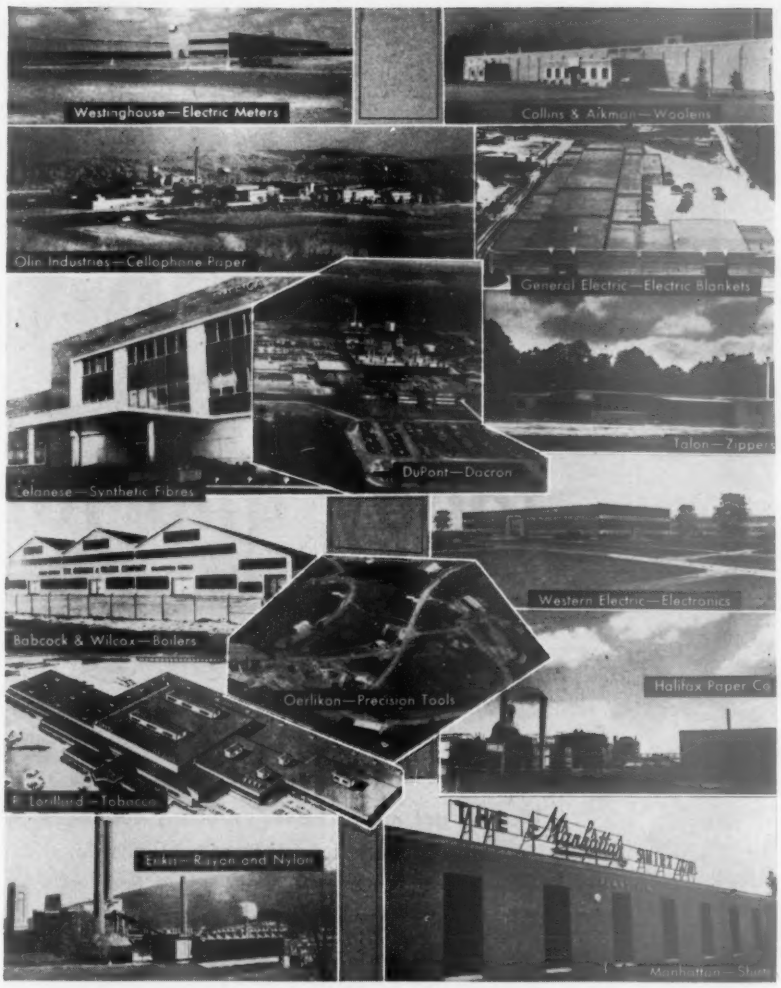
Dear Sir:

Your article in the Aug. 14 issue relative to the distress of a minor league baseball club is certainly true in every respect. However, in the many [similar] articles recently published concerning the destiny of minor league baseball, we fail to find mention of one noticeable reason for the turnstiles gathering dust and that is the sad realization that society is simply dropping baseball, especially minor league baseball.

Perhaps the major league clubs still attract the elite clientele, but glance around and over your shoulder in the minor league stadium and see how many of the upper crust are in the audience. You will find very few, and . . . the children of these parents know little or nothing about baseball. . . .

I can recall as a boy walking several miles, simply to look through a knothole, because of an undying love for the game. . . .

GEORGE W. BAILEY
VICE-PRESIDENT
CHAPMAN DRUG CO.
KNOXVILLE, TENNESSEE



THEY CHOSE NORTH CAROLINA

Symbolic of the diversity of North Carolina's industrial growth are these firms, representative of 340 new plants established in the South's leading industrial state in the last two years.

Already the national leader in textiles, tobacco and wooden furniture manufacturing, North Carolina is making significant strides forward in the fields of electronics, machinery, paper and other diversified industries.

Opportunity continues unlimited in the advancing South, and North Carolina has a wide choice of sites and plants for expanding industry, with highly favorable climate, market, labor and recreational factors.

For more information communicate with Ben E. Douglas, Director, Dept. of Conservation & Development, Raleigh, N.C.

The 48-page booklet "NORTH CAROLINA STORY" describes the State's industrial diversity in a chapter "From Aircraft to Zippers". Write for a copy.

Friendly North Carolina
Where Industry Prospers

Plenty of Copper.

today and tomorrow

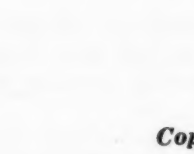
The assurance that copper is in abundant supply and *can be used without restrictions* is the "go ahead" for industry. You can now rate PERFORMANCE over AVAILABILITY when choosing materials. By using copper and its alloys, brass and bronze, your product is easier to fabricate, better and more durable.

We can get more copper than we now have. Although industry and government have been consuming more copper than in any previous peacetime period, production has kept pace with this increased demand. And producers are not working at full capacity!

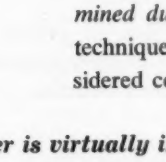
More copper keeps on coming. Eleven major new projects in the U. S. will start producing in the next 3 years. These mines will add 250,000 tons to our annual production—more than *¼ of all the domestic copper mined during 1953.* In addition, recent improvements in mining techniques now make it possible to obtain copper from ores considered commercially unworkable in the past.

Copper is virtually indestructible. At least 3 out of every 4 pounds of copper used in today's products, when scrapped, can be re-used in the future. Every day we are adding to our "copper capital". The more copper we use . . . the more we have!

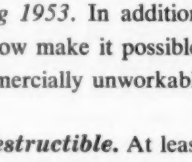
Copper or its alloys provide these advantages . . .



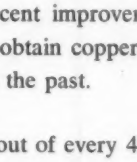
Best conductor of electricity commercially available.



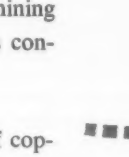
Does not rust . . . high corrosion resistance.



Best heat transfer agent of all commercial metals.



Easy to machine, form, draw, stamp, polish, plate, etc.



Welds readily . . . excellent for soldering and brazing.

Source—American Bureau of Metal Statistics Year Book 1953

Copper has a new ability to serve you. Many of your problems are being solved in the laboratories of the copper and brass industry. Whether it's a new alloy, a different temper or a special property . . . copper can help you develop new ideas. Copper can bring old methods up to date. Call a supplier of copper and brass and convert your thoughts to action!

COPPER & BRASS
Research Association

❊ ***"Copper . . . is fortunately available in ample supply to meet any foreseeable demand"***

Foreword, U. S. Dept. of Commerce
B.D.S.A. Copper Quarterly, August 1954

For information about U. S. copper supplies including free copies of this Government report and the new booklet, "Copper . . . Today and Tomorrow", send attached coupon to:

Copper & Brass Research Assn., Dpt. D
420 Lexington Ave., New York 17, N. Y.

NAME .....

COMPANY .....

ADDRESS .....

CITY .....STATE .....

Featuring new Micarta counter tops, new styles, more sizes, combination units now more beautiful than ever!

■ American-Standard lavatory-dressing tables have been re-designed for greater beauty . . . and for wider latitude in planning bathrooms and powder rooms for homes, hotels and motels . . . as well as for restrooms in offices, theatres and other types of commercial buildings.

Featuring counter tops of durable, decorative Micarta, and available in a wide choice of cabinet sizes and lavatory arrangements, they are the most distinctive ready-built combinations on the market. The handsome units feature a fine quality lavatory and a vanity cabinet. Most models include such built-in conveniences as a medicine chest, specially designed drawers for cosmetic and toilet accessories, as well as plenty of storage space for towels. The cabinets come in gray, peach, buff, blue and white; the Micarta tops in tan, mulberry, and gray; the lavatories in white and popular American-Standard colors.

This improved and expanded line includes the Dresslyn with its deluxe lavatory of genuine vitreous china, the Merrilyn with vitreous china lavatory, and the Highlyn which has a lavatory of heavily enameled cast iron.

The advanced thinking and research behind this re-designing job is typical of what's constantly going on at American-Standard to give you the best looking and finest quality plumbing fixtures money can buy! *These beautiful new lavatory-dressing tables make American-Standard leadership in this field more secure than ever!*

AMERICAN-Standard
BATHROOMS

American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.

Serving home and industry: AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

BUSINESS OUTLOOK

Don't underrate politics as a factor in the business outlook.

The outcome of the Congressional races may not have any immediate impact on consumer spending, but it will influence business decisions.

Just as this week's results in Maine took a little zip out of the stock market (page 178), the November vote could sober businessmen.

If the Democrats were to organize one or both houses of the next Congress, a changed approach to business legislation could be expected.

And the mere fact of friction between White House and Capitol Hill would nip the business confidence that has been so beneficial.

Look how a political philosophy has shaped the business curve:

• **It prolonged the boom.** Signs of a downturn were cropping up even in 1952. Hopes for a GOP victory staved off the recession before election, and the actual outcome kept the boom going well into 1953.

• **It minimized the recession.** In point of time, the recession has been relatively short; the depth has not been great; unemployment has not been large, and personal income has held up so well that you hear little of "hard times."

Political worries won't help get an upturn going. This is particularly true at a time when industrial crosscurrents are likely to make the September-October figures on over-all business pretty inconclusive anyhow.

That, though, may be just the price you pay for free elections.

—•—

Satisfactory demand persists for nonferrous metals—even though steel operations remain at about two-thirds of capacity.

One wag in the nonferrous field, in fact, calls it rolling inflation—a market in which one metal may stop for breath even as prices are being marked up some place else.

Stockpiling has a hand in this. So do strikes. But, over all, the tone is very much improved over late 1953 and early 1954.

Users of copper are definitely worried about availability of the metal in the fourth quarter. Here, of course, strikes are a major factor. But so is demand in Europe.

Speculators in London may have been caught short again. In any event, copper for quick delivery there has gone to a premium once more.

Plenty of zinc is in sight, and lead is by no means short. Their price action must be explained mainly in the light of stockpile buying.

Meanwhile, lead is playing a big hand in any "rolling inflation" we may be having—another boost of ¼¢ a lb., came this week, making the third markup of that amount in about a fortnight.

Products that use nonferrous metal generally require steel. That isn't always so, of course, but it's a good generality.

So perhaps nonferrous prices are forecasting the steel prospects.

You could say the same thing about prices of steelmaking scrap. Another advance was posted this week. (But is should not be overlooked that much of the rise in scrap has been confined to the East Coast; this reflects export buying for Europe. Interior points haven't had any such rise.)

—•—

Employment figures for August, while comforting, did little more than might have been expected for the time of year.

There was a dip of more than half a million in the number of farm jobs, but the gain in nonfarm employment more than made up for it. The result was a small rise in over-all employment to better than 62¼-million. Unemployment shrank 3,245,000, down 100,000 in a month.

Factory employment rose a quarter of a million from July to August.

That's the first gain worth mentioning in a year. Yet it's no more than normally would be expected for the season.

Moreover, contradictory trends of the sort expected from now to November were becoming visible in August. Thus several of the industries manufacturing durable goods showed employment gains (notably electrical machinery) but transportation equipment sagged (due to autos).

Factories turning out nondurable goods for consumer use may not be as active as they were a year ago, but they added at least seasonably to their work force in August.

The highly seasonal food-processing factories hired 75,000, and the apparel trade bettered that gain by nearly 3,000.

This seems to indicate confidence in Thanksgiving-Christmas trade.

—•—

Flash reports to the Dept. of Commerce show retailing in August at a very high level—but off just a little from a year ago.

The figure clung close to the $14-billion level. Yet August was the fifth month of the first eight this year to show a decline from the like 1953 period.

Autos accounted for about half of August's retail sales decline from a year ago, with food and building supplies the other major losers.

You can account for the decline in food store sales rather easily: Prices were down, particularly in the case of meats. And the June sales drive in autos undoubtedly borrowed from both July and August.

But the dip in builders' supplies—in the midst of record construction—remains one of the major mysteries of 1954.

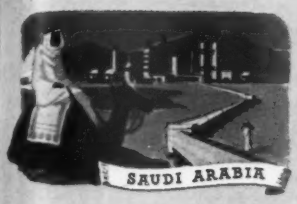
Largest of the retail sales gains are those for filling stations. Even though gasoline demand this summer has been a bit below earlier trade expectations, sales of filling stations topped the billion dollar mark in both June and July for the first time on record.

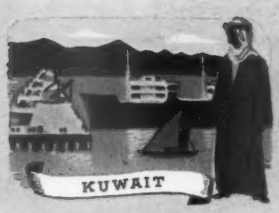
—•—

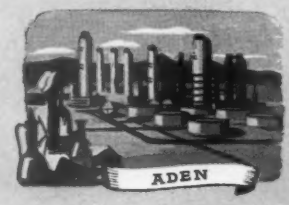
Inventories have been reduced sharply in the rubber industry between the effects of vacations and labor difficulties.

In July alone, production of passenger car tires was cut 28%—while shipments went off only 2½%. Stocks dropped by more than 2-million.

Contents copyrighted under the general copyright on the Sept. 18, 1954, Issue—Business Week, 330 W. 42nd St., New York, N. Y.







In Many Lands

Technical knowledge and organization are assisting many countries in the development of their resources. Bechtel is performing a basic function in this program of international cooperation...as an engineer and constructor of projects in many world areas.

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BUILDERS FOR INDUSTRY

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BECHTEL ASSOCIATES **BECHTEL INTERNATIONAL CORPORATION** **CONSTRUCTORA BECHTEL, S. A.**

EASTERN BECHTEL CORPORATION **MEDITERRANEAN BECHTEL COMPANY, INC.**

MIDDLE EAST BECHTEL CORPORATION

Yesterday . . .
"The Fates" Decided
In the 6th century, B. C., King Croesus of Lydia was told by the Delphic Oracles he could defeat the Persians. Relying on "The Fates" instead of the facts, he took on an enemy he should have known was too strong for him ...and he was badly beaten. Lack of facts cost him his kingdom and his freedom.

Croesus' cavalry stampeding at the sight of Persian camels

Today . . . Facts Are What Count

The recent great strides in military science, pure science, commerce, and industry have resulted from modern man's ability to determine the facts and act accordingly.

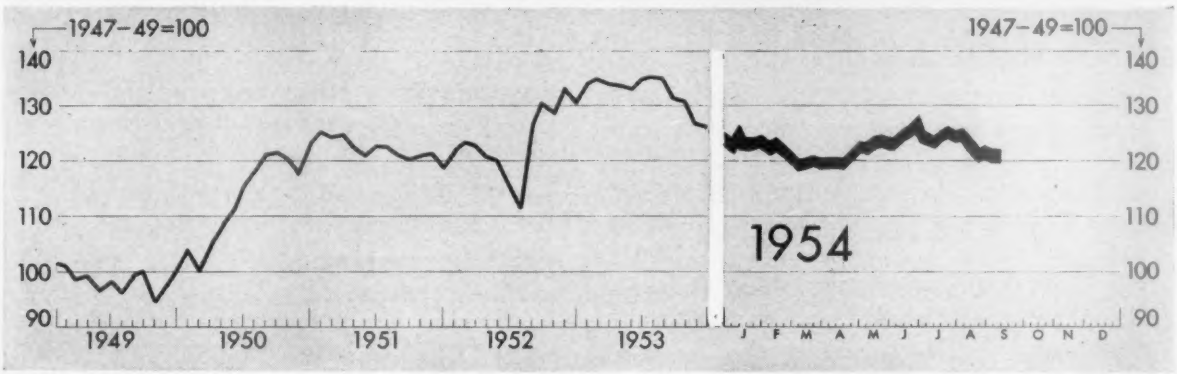
Tremendous advances have been made in the past few years in fact-finding machines. Through electronics, great masses of data that would have taken a lifetime to process can now be handled in a few days. Ordinary volumes of work can be done in minutes.

By making "mathematical models" of specific processes, products, or situations, man today can predetermine probable results, minimize risks and costs.

IBM
TRADE MARK

World's Leading Producer of Electronic Accounting Machines
INTERNATIONAL BUSINESS MACHINES, 590 Madison Ave., N. Y. 22, N. Y.

FIGURES OF THE WEEK



	Latest Week	Preceding Week	Month Ago	Year Ago	1946 Average
Business Week Index (above)	*121.9	†122.1	124.1	130.8	91.6
PRODUCTION					
Steel ingot production (thousands of tons)	1,580	†1,502	1,474	2,060	1,281
Production of automobiles and trucks	84,556	†110,995	119,208	122,863	62,880
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands)	$49,043	$46,978	$54,544	$44,985	$17,083
Electric power output (millions of kilowatt-hours)	8,808	9,087	8,996	7,963	4,238
Crude oil and condensate production (daily av., thousands of bbls.)	6,178	6,111	6,158	6,506	4,751
Bituminous coal production (daily average, thousands of tons)	1,275	1,235	1,233	1,599	1,745
Paperboard production (tons)	176,765	244,002	248,147	201,235	167,269
TRADE					
Carloadings: manufactures, misc., and l.c.l. (daily av., thousands of cars)	68	67	65	76	82
Carloadings: raw materials (daily av., thousands of cars)	47	46	46	58	53
Department store sales (change from same week of preceding year)	+13%	+1%	none	+1%	+30%
Business failures (Dun and Bradstreet, number)	168	193	233	131	22
PRICES					
Spot commodities, daily index (Moody's Dec. 31, 1931 = 100)	409.0	412.3	427.2	414.7	311.9
Industrial raw materials, daily index (U. S. BLS, 1947-49 = 100)	87.1	86.4	85.7	84.9	††73.2
Foodstuffs, daily index (U. S. BLS, 1947-49 = 100)	97.0	97.6	99.5	98.6	††75.4
Print cloth (spot and nearby, yd.)	19.0¢	18.9¢	18.9¢	21.0¢	17.5¢
Finished steel, index (U. S. BLS, 1947-49 = 100)	144.5	144.5	144.5	141.7	††76.4
Scrap steel composite (Iron Age, ton)	$29.50	$29.00	$28.67	$37.17	$20.27
Copper (electrolytic, Connecticut Valley, E&MJ, lb.)	30.000¢	30.000¢	30.000¢	29.985¢	14.045¢
Wheat (No. 2, hard and dark hard winter, Kansas City, bu.)	$2.40	$2.40	$2.30	$2.26	$1.97
Cotton, daily price (middling, ten designated markets, lb.)	34.30¢	34.23¢	34.15¢	32.83¢	30.56¢
Wool tops (Boston, lb.)	$2.25	$2.25	$2.23	$2.12	$1.51
FINANCE					
90 stocks, price index (Standard & Poor's)	246.6	242.5	245.5	182.9	135.7
Medium grade corporate bond yield (Baa issues, Moody's)	3.47%	3.47%	3.49%	3.88%	3.05%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate)	1¼–1⅜%	1¼–1⅜%	1⅜%	2¼%	¾–1%
BANKING (Millions of dollars)					
Demand deposits adjusted, reporting member banks	54,013	†54,066	54,127	53,034	††45,820
Total loans and investments, reporting member banks	82,670	†82,778	83,267	79,138	††72,036
Commercial and agricultural loans, reporting member banks	20,829	20,805	20,829	22,957	††9,299
U. S. gov't guaranteed obligations held, reporting member banks	35,526	†35,862	36,389	31,512	††49,879
Total federal reserve credit outstanding	24,705	24,890	25,066	26,179	23,883
MONTHLY FIGURES OF THE WEEK					
Average weekly earnings in manufacturing (August)		$71.06	$70.92	$71.69	$43.82
Wholesale prices (U. S. BLS, 1947-49 = 100) (August)		110.5	110.4	110.6	78.7
Bank debits (in millions) (August)		$151,525	$154,856	$134,386	††$85,577
Wholesalers' inventories (seasonally adjusted, in millions) (July)		$11,746	$11,865	$11,888	$5,489
Retail sales (seasonally adjusted, in millions) (July)		$14,272	$14,439	$14,469	$8,541

*Preliminary, week ended Sept. 11, 1954.
† Revised.
†† Estimate.
§ Date for "Latest Week" on each series on request.

in BUSINESS this WEEK . . .

GENERAL BUSINESS:

BUT THE BUDGET DEFICIT GROWS. Federal spending cuts won't balance the drop in revenue ....p. 25

NEW SIZE AND SHAPE OF MILITARY BUSINESS. Latest weapons are supposed to give better defense for less....p. 26

ECONOMY-SIZE VACATIONS. Tourist business hit a peak, but money was more carefully spent ....p. 29

CONSTRUCTION: UNEXPECTED BOOM. Building activity has been felt throughout the industry's supply line ....p. 30

I. LUMBER missed the best part, but . . .
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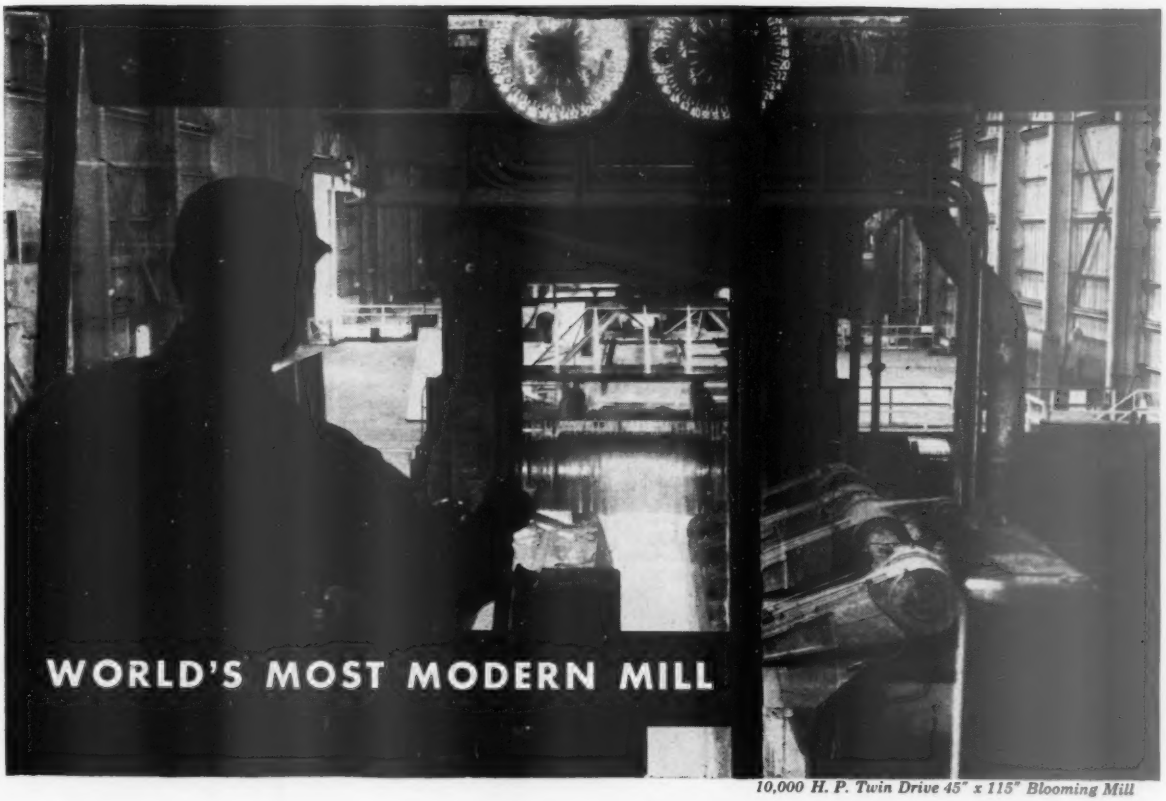
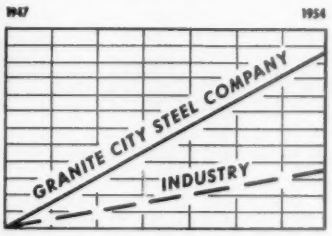


10,000 H. P. Twin Drive 45" x 115" Blooming Mill

Four reasons why Granite City Steel is growing 3 times faster than the industry!



Percentage increase in steel ingot capacity

**Computed from AISI figures.*

From 1947 to 1954, ingot capacity of the average U. S. steel mill increased 36%*. During the same period, ingot capacity of Granite City Steel Company expanded 108% — from 620,000 to 1,290,000 tons a year—or three times faster than the industry average!

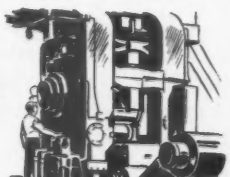
Why? Because the demand for Granite City sheet steel dictated one of the most ambitious plant modernization and expansion programs ever undertaken. An $89 million investment went into blast furnaces, additional coke ovens, new open hearth furnaces . . . a new blooming mill, a new roughing mill . . . sharply stepped-up hot strip mill capacity . . . a new hot rolled shear line, a new cold strip mill.

Result: the world's most modern, fully integrated mill, specializing in high quality flat-rolled steel for Middle America.

What does this growth mean to you? Fast, complete service and personal attention to every order, large or small. Granite City is equipped and eager to serve *you*. May we discuss the steel needs in your business, today?

AND HERE ARE THE OTHER THREE REASONS . . .

Low-cost transportation. Granite City Steel Company is strategically located in the heart of Middle America. Rail, truck and water transportation are available for quick, efficient, economical shipping.



Specialized "know how." For 76 years, flat-rolled steel has been the only product of Granite City Steel Company. This specialization—in training, personnel, equipment—is your guarantee of finest sheet steel available.

Personalized service. Granite City steelmen do not have the manufacturing and sales problems of a large, diversified line of products. This gives them more time to expedite your flat-rolled steel order promptly, properly.

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GRANITE CITY, ILLINOIS
Sales Offices: St. Louis • Kansas City • Memphis • Minneapolis
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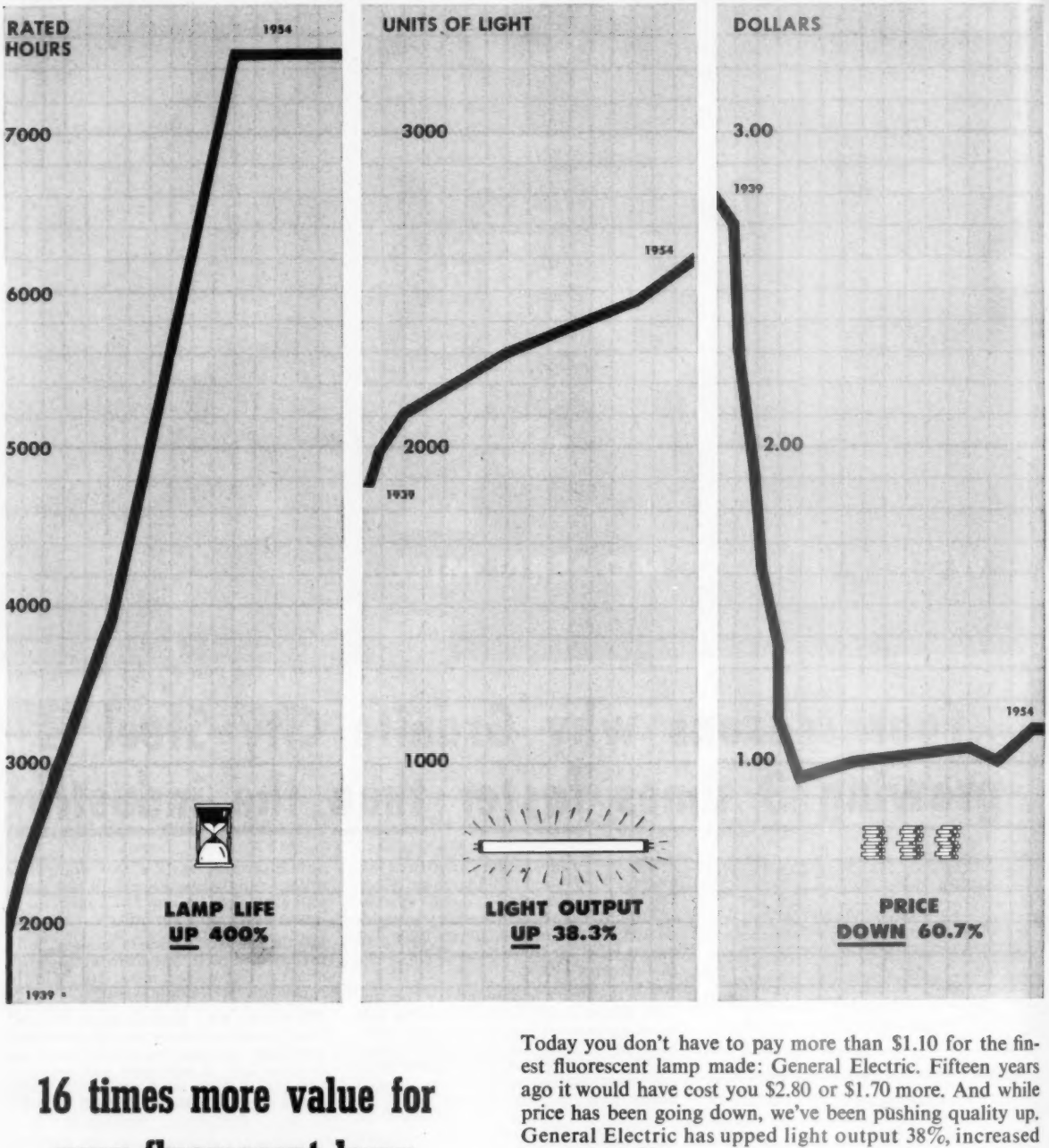
YOU EXPECT THE BEST VALUE FROM G-E FLUORESCENT LAMPS



16 times more value for your fluorescent lamp dollar than in 1939

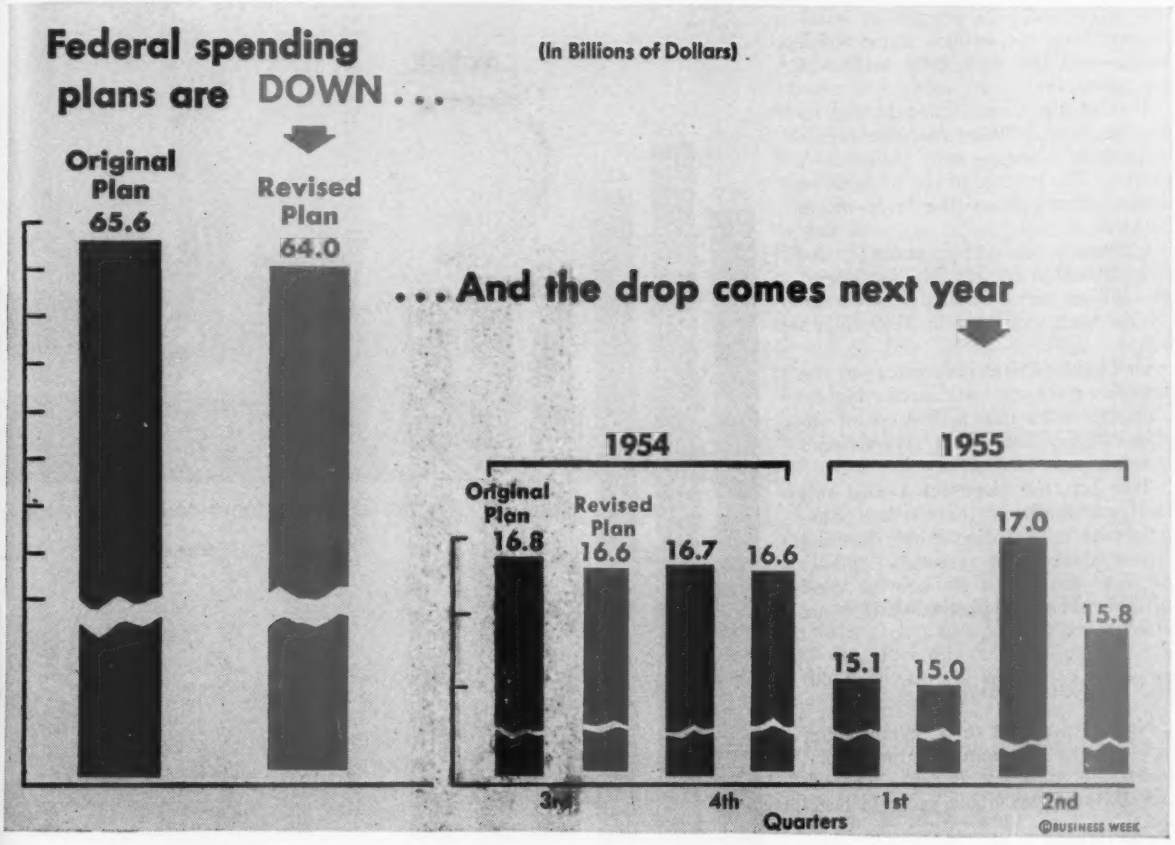
Today you don't have to pay more than $1.10 for the finest fluorescent lamp made: General Electric. Fifteen years ago it would have cost you $2.80 or $1.70 more. And while price has been going down, we've been pushing quality up. General Electric has upped light output 38%, increased lamp life 400%.

In terms of what you really judge lamps by, a General Electric 40-watt fluorescent lamp that lists at $1.10, plus tax, today is a *16-times bigger value than it was in 1939.*

For further information, contact your G-E lamp supplier or write to Lamp Division, General Electric, Department 166-BW-9, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC



But the Budget Deficit Grows

The Administration this week tore up the budget it sent to Congress last January and started all over again.

Spending is going down—perhaps as much as $3-billion below anything previously foreseen for the fiscal year that began last July 1.

Revenues are dropping even more, mostly because of the drop in business that began 14 months ago.

The deficit has jumped to the highest point ever reached in an Eisenhower budget. The new estimate is for $4.7-billion this fiscal year.

• **Any Doubts?**—Treasury Secy. George M. Humphrey describes the new slash in spending as "a vote of confidence in the business situation."

"If we'd had any doubts about business, we would not have cut another dollar," he said.

It is also a vote of confidence in the Administration's defense policy, which calls for a decline in dollars spent for arms (page 16). The biggest of the new slashes fall on the Defense Dept.

I. More Savings

The revised budget—issued in the guise of the annual review of Congressional appropriations—calls for $1.6-billion less spending than the budget that Pres. Eisenhower recommended to Congress last January. This means cutting the outlay of dollars from $65.6-billion to $64-billion.

But that isn't the whole story.

Officials in the Defense Dept. privately expect to drive their spending down an additional billion. Savings elsewhere could run the cuts to $3-billion, or more.

The Defense Dept. plans on making the biggest reductions in procurement of hardgoods. Aircraft will get about $400-million less than called for in the January budget—almost entirely from programs that simply haven't panned out at the production level. The big slice—almost $800-million—will come out of Army material such as motor vehicles, spare parts, and "shelf items" that have been ruled in excess supply. Clothing purchases will be cut in half, for example.

• **Across the Board**—Every national security program except stockpiling was slashed in the new budget. Stockpiling went up more than $300-million in a plan designed partly to strengthen the market for domestic zinc and lead (BW—Aug.28'54,p18). Foreign military aid has been cut just under $1-billion, and the Atomic Energy Commission will spend a quarter of a billion less than foreseen in January.

These reductions in the security programs are partly offset by spending

rises for such programs as agricultural price supports, home mortgage financing, and highways. Most of the rises have an anti-recession flavor.

II. Less Taxes

In January, tax revenue for the current fiscal year was pegged at $62.7-billion. Now the outlook is for $59.3-billion—and this may turn out to be too optimistic.

Part of the drop is due to the reduction of $1.1-billion in excise taxes—ordered by Congress over Humphrey's protest. The balance of the $3.4-billion decline stems from the drop-off in business.

Corporate taxes, for example, are now estimated at $18.7-billion, down $1.5-billion since January. Personal income taxes will bring in $300-million less.

• **Or Higher**—Private estimates put the possible revenue loss much higher. Corporate taxes may well drop off another $1.5-billion from Humphrey's figure.

This sets the stage for a race this fiscal year similar to the one last year—with cuts in spending barely keeping abreast of declining revenues. And—as last year—the deficit is likely to wind up just about as planned—this time, $4.7-billion.

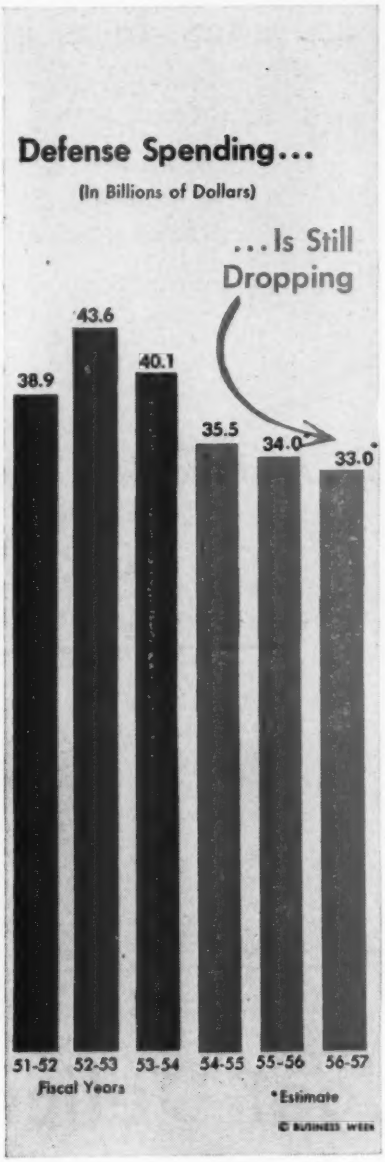
III. Bigger Deficit

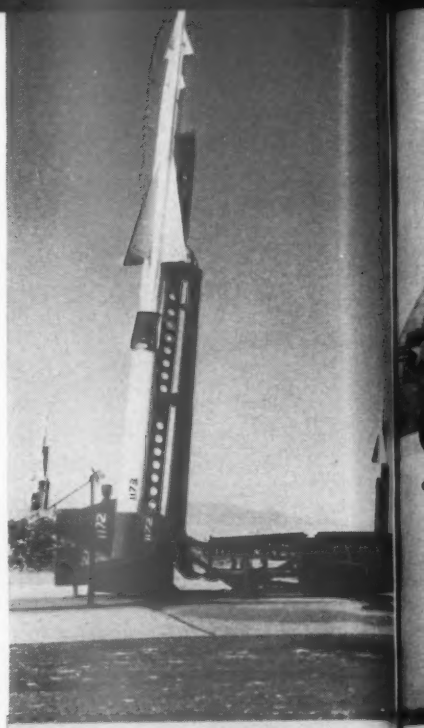
Nobody pretends to be happy about the deficit. Humphrey admits that during the past six months, the Administration "has made progress backwards."

For one thing, Humphrey faces a renewed tussle with the debt ceiling. The temporary $6-billion rise in the ceiling allowed by Congress will let him slip by until Congress meets again. But unless the tax take is a lot bigger than now foreseen, he will probably have to ask for an extension of the higher ceiling, which now bears a June 30 cutoff.

Humphrey is hopeful of winding up the fiscal year next June with a lower deficit than the $4.7-billion now foreseen. His best chance is a business upturn.

• **Cash Budget**—As matters stand now, however, even the cash budget—the one watched most carefully by economists—will be into the red next June. The cash budget is a method of reporting the actual flow of money between the federal government and the people. It includes Social Security trust fund payments, for example, that do not show up in the traditional budget. Last fiscal year, it was just a shade in the red. Now it may turn into a deficit of $2.1-billion.





Nike ground-to-air missile . . .

Amphibious troop carrier . . .

THE PLAN . . . . . MORE DEFENSE FOR $$

New Size and Shape

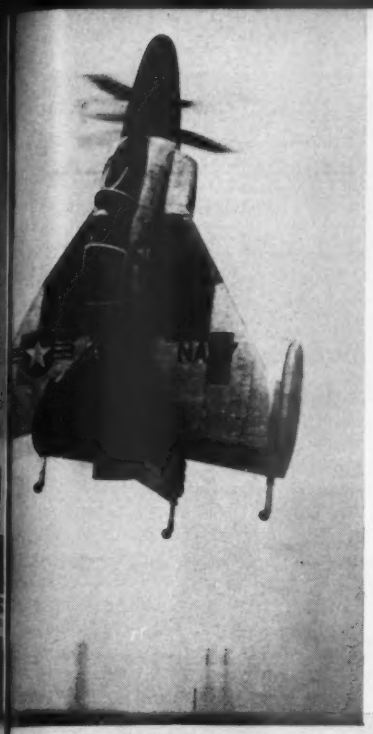
Military spending has been dropping ever since Pres. Eisenhower took office (chart). It will decline again this year and for several years to come—unless the international situation turns dramatically for the worse.

Far from being downhearted about the defense spending cuts, businessmen who talked to BUSINESS WEEK reporters this week are generally more hopeful than the over-all figures would suggest. Almost unanimously they said that procurement is now on a more businesslike basis than it has been for years, that the government is getting better, more modern weapons for its money.

Executives of smaller companies were especially optimistic about an upturn in defense business despite the long-term trend. They feel they are getting a better shot at the available work.

• **Harmony**—For the first time in years, these reports from the field agree with the official line from Washington. The Administration declares that its cuts in arms spending are not a reduction in defensive strength. Instead, Washington says, the shift to more air power and the development of new weapons actually gives the country a stronger defense.

Some of the new weapons have been publicized (pictures), but others are still



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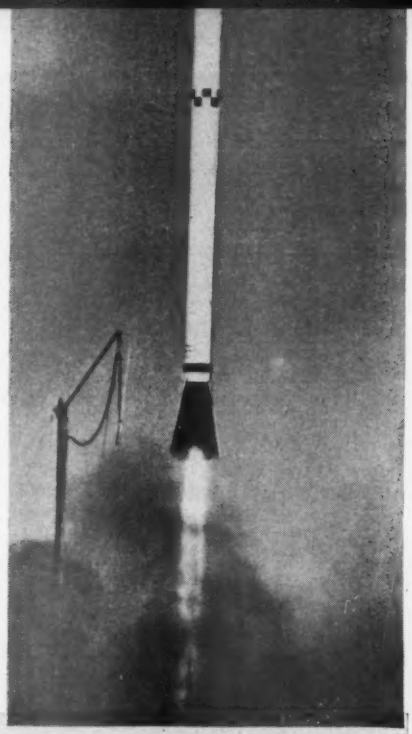
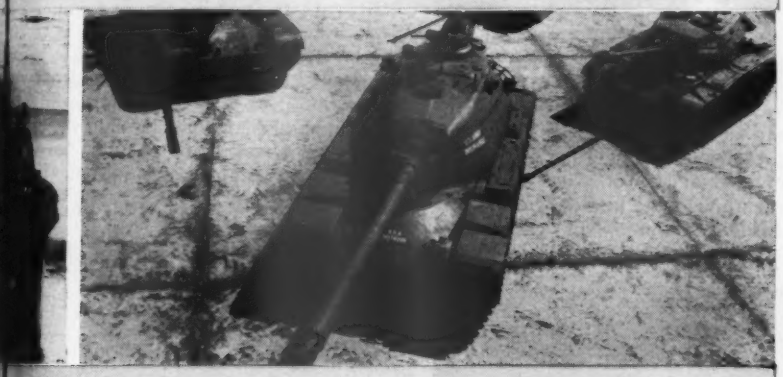


Ground-to-ground missile . . . .



. . . . and the latest heavy tank all add up to . . . .

S WITH WEAPONS LIKE THESE IN . . . .

f Military Business

wrapped in security rules. So the Administration has to ask the public to take its "better defense for less money" policy partly on faith. This faith has been strained by Communist successes: Indo-China and the death of the European Defense Community.

• **Shift of Emphasis**—Under the Eisenhower military policy, the only service branch to get more money is the Air Force. In the fiscal year that started July 1 Air Force personnel will be up, by 15,000 men, to a new total of 970,000; the number of combat wings will rise from 99 to 107.

Guided missiles are getting more attention, more money. In the 1953-54 fiscal year, $298-million was spent on missiles; in 1954-55, if current projects all pan out, $660-million will be spent. Orders for rocket launchers have been running at 6,000 to 7,000 launchers per month; next month, orders for 50,000 units will go out.

I. Pentagon Paradox

The January budget that Pres. Eisenhower sent to Congress called for $37.6-billion for the Defense Dept. This sum was shaved to $35.5-billion in the budget review this week. Actual spending may trail behind the budget allowance—it has done so throughout the Eisenhower Administration.

But now comes the Pentagon paradox. Despite the steady decline in dollar outlay, the Defense Dept. promises a sharp increase in the number of new contracts—more than four times as many this fiscal year as in the year ended June 30.

• **The Real Thing**—The key to the paradox is a simple fact: It's all done with bookkeeping. All through the 1953-54 fiscal year, the Pentagon was busy canceling contracts, not awarding new ones.

Many of the rescinded contracts existed only on paper. For example, the Air Force might have on the books a "shadow" contract for $50-million worth of parts to be ordered some day for $200-million worth of planes delivered by the contractor. Then the planes might be declared obsolete, and the shadow contract would be canceled. This would take $50-million from the "new contracts" total, even though the contractor had never even had a smell of the money.

Enough of these shadow contracts were wiped off the books to drop the last fiscal year's net figure for "contracts awarded" to an artificially low level. This makes the new contracts look sensationally higher than a year ago. Actually, the arms ordered and produced in this fiscal year will be just about the same as last year.

However, business has this new assurance: Contracts now on the books more nearly represent firm orders for goods than they have at any time since before the Korea buildup.

II. Businessman's View

No recent cancellations, no recent awards. That's the report from company after company.

Businessmen have learned to get along with and even to like the stretchout that keeps them producing munitions at half speed instead of rush and crash. They generally approve the armed forces' procurement methods. They expect a continued fall-off in defense work and are hustling to build up the civilian end of their sales. However, the smaller companies in all parts of the country will be disappointed if their share of defense work doesn't gain this fall. They're counting on it.

• **Never Say Die**—A good example of this optimism is to be found in the machine tool and die-making shops of the Syracuse (N. Y.) area. Some of these shops lost blood in the defense cutback. In late 1952, they lost 40% or 50% of their business, and ever since then their shipments have been running discouragingly ahead of new bookings.

Under these circumstances, it is

cheering to hear machine tool people say now that business is getting better. One Syracuse man looks for a definite upturn in October, with business perhaps 25% better than last year.

"Small business people stand to benefit first under any immediate move by the government to stimulate defense business," says the report from Syracuse. "The little guys see a definite pickup in the next couple of months; the big ones think the lid won't really be lifted until the turn of the year."

• **Tightening Up**—Apart from what the Pentagon says, businessmen mostly agree in looking for more defense business rather than less. They seem to have sensed the "on paper" nature of the contract cancellations, and they like the hard look of the new contracts.

"We don't see any change in award policies," says a spokesman for a big Chicago company. "It has taken the Defense Dept. quite a while to make up its mind as to what kind of military establishment the country needs. Bidders had to wait out the decision-making period. Now, awards should flow more steadily."

Most companies, large or small, agree that the little fellow is favored by present conditions. "The little guy can underbid the big plants," the director of contracts for a big aircraft manufacturer says. "A prime manufacturer's overhead will run $1 an hour more than that of small companies."

"When the competition's rough, as it is now, maybe 40 companies will bid on a job," a New England manufacturer explains, "and one of them will make a mistake—he'll be low and get the contract and have to deliver at a loss. It's the smaller companies that take these risks to get a foot in the door. If they lose—well, they didn't have any money anyway. But it cuts out the bigger companies."

"Any established contractor is at a disadvantage now," is the dour comment of a Milwaukee executive, "because he must compete for new work with inexperienced bidders who err on the low side."

• **Steady as You Are**—Among the bigger defense contractors, there's neither optimism nor pessimism about future business. They take their cue from the mood of military procurement people: not a hurry-up pace nor a slowdown, just a normal, businesslike procedure.

One Midwestern manufacturer who is 90% on defense work said his backlog remains at 10 months, same as a year ago. He has had no cancellations since directly after the Korea shooting stopped; in fact, some cancellations that were made then have since been reinstated as firm orders.

A Chicago company with a $75-million defense backlog reports that military business is even higher than last year, but it expects this to be the last year of high defense business. This company believes that the Army is a lot better purchasing agent now than it was a few years ago, thanks to learning from experience and to pressure from higher up not to waste.

Another Midwest company is jubilant over the largest order it ever got in peacetime, which brings its defense volume even with last year. Company officials say procurement is orderly, price-conscious, sharp in stirring up competition. "Military people are doing a damn good job of buying," an executive declares.

• **Quality First**—Most manufacturers say they sense a policy of going heavy on research and development, light on production of stuff that may soon be outmoded. "The military people want to be sure the stuff they order into production is the latest and best," a West Coast aircraft executive says. "You can't hate them for that. And they have moved heaven and earth to give our industry's engineers an idea of future requirements far in advance, so we can prove out the design long before it goes into production."

Aircraft builders are happy, too, that design competitions are wide open now. The terms of these "competitions" used to be rigged in favor of the design that the procurement officials had already picked. Now the Air Force may say it wants a fast, light day fighter, and four companies work like beavers to come up with the best design.

• **Minority Report**—Not every manufacturer is enchanted with procurement policy, of course. An official of a West Coast company says contracts are being delayed by "ludicrous things such as typographical errors." Another says the Air Force has installed a new system of double checking at various stages of an award so "a contract now has to clear through more buckets in the bucket brigade."

For the Buggy Trade

Not all new planes try to break the sonic barrier. The chief claim for the plane above is that it can fly as slow as 11 mph., just about horse-and-buggy speed. Thus it can drift into a landing space no bigger than a fair-sized lawn. Custer Channel Wing Corp., the manufacturer, says the secret is the downward half-circle in the wing on each side of the fuselage; a pusher engine operates in each of these "channels."

III. Standby Role

When military contracts are wound up and not replaced by new ones, some companies say they prefer to dig up a comparable volume of civilian work or to take on reconditioning work that uses the same labor and equipment. Sometimes, though, the plant or the equipment is too specialized—or too valuable in its present form—to be converted from defense work. Then it must stay on standby duty.

In such cases, it's standard procedure for the armed forces to pay the contractors to mothball the tooling at government expense. That's what happened last spring to $40-million worth of tank-building equipment in the custody of the Ford Motor Co. at Livonia, Mich. (BW—May8'54,p29).

• **Old Order Changeth Not**—Three weeks ago, the Office of Defense Mobilization outlined a program of keeping key defense plants on standby status after current contracts run out. Actually, the order changes nothing. In Washington, it is regarded as ODM's way of needling the armed forces into faster action—the Pentagon goes so far as to tag it as ODM's way of earning its keep as a government agency.

The Defense Dept. estimates the number of standby maintenance contracts at far more than 1,000, and cost at about $35-million a year. Defense would like to make twice as many contracts, but lacks the funds to do it. So far, plans have been so vague that Congress, unimpressed, has whacked the budget item way down.

• **Three Forms**—The Pentagon's industrial mobilization plan takes three main forms:

• Buying machine tools that have a long manufacturing lead-time, to round out the current supply of idle machinery. The services have drafted $407-million worth of reserve tool projects.

• Creating standby capacity to make the most critical industrial components that go into military goods: special pumps, compressors, turbines, valves, instruments, and the like.

• Stockpiling "elephant" tools, the huge multipurpose machines that are needed to build other machines. The idea is that these won't become obsolete as quickly as the special-purpose tools they're designed to make.

PICNICKING and camping gained in popularity as the U. S. public turned to . . .

Economy-Size Vacations

Tourist business hit a peak, but people sought out cut-rate facilities. The family car worked overtime, but the gas bills were kept low.

Vacationing Americans this year, whether they motored to old resorts or planed off to new ones in Europe or the Caribbean, managed to spend more—but were spending it in different ways, and making sure they got the most for their money.

This is the way the summer travel picture shapes up:

Holidaying motorists were taking shorter trips. Gasoline consumption was only 3% ahead of last year, as compared with normal summertime jump of 5%. Oil companies reported no significant gain in requests for tour routes. One company reported the average route requested this year was for a 2,700-mi. trip, as compared with last year's 3,000-mi. trip.

The drop in long trips also affected vacationers' choices of resorts. Many went to nearby resorts—like the new spas in Michigan and Pennsylvania. Hotels and auto courts, forced into rate reductions by increased competition, said a healthy slice of vacationers' money went for camping sites and provisions. With campers, general stores were more popular than first-class restaurants.

Southland winter resorts were packing in record crowds. Florida's mainline hotels, which normally cater to only the $50-a-day winter trade, reported sellouts—mostly to lower-income crowds who were taking advantage of reduced rates. Miami Beach bulged with summer traffic, reported tourists numbered as many as 1952's winter visitors.

With reduced railroad coach fares and airline package tours attracting summer visitors, Florida found tourist volume up 5%. Floridians don't think the summer boom will lessen winter business, since the summer tourist isn't likely to go South in the winter anyway.

Travel to Europe attracted more people, with the year-round American tourist total up 49% since 1950. The State Dept. this summer reported a 5% gain in passports to Western Europe. Tours to Great Britain, France, and Italy were still popular, but Spain and Germany were nudging upward as favorites.

Transatlantic steamship business, while only slightly above last year's, managed to handle heavy crowds. Tourist and cabin space had been sold months ahead of time; and first-class passage, usually the last to go, was picked up almost equally early. Some steamship lines reported as many as 15 standby passengers at New York's gangplanks, waiting to snatch up last-minute cancellations.

But the big push in Europe-bound travel was in transatlantic airlines. Increased air-coach accommodations, which accounted for most of the upswing, and time-payment plans fattened the airlines' business. PanAm, which introduced its time payment plan May 1—when most Europe-bound vacationers had already made bookings—figures the plan brought in at least $2.5-million in new business.

Many vacationers in Europe picked off-beat towns. Tourists spent less in the big spots—London, Paris, Rome—and scattered by rented car into the provinces and hinterlands. In England, where this year's tourists outnumbered last year's record Coronation crowds, Scotland and Wales got a big chunk of the summer trade. And all over the continent, auto travel picked up in popularity. The American Automobile Assn.'s international department issued 17,000 international driving permits this year, as compared with last year's 15,500.

Off-season travel accounted for much of the tourist trade. Long promoted by European governments, off-season tourism gained 82%, over September-through-April figures for 1950.

Generally, you find both in this country and elsewhere—Europe, Bermuda, and Hawaii—that Americans are spreading out their vacations through the year. The wealthier still go during the traditional seasons; others find bargains and less congestion off-season.

New York Slashes Fire Insurance Rates

Owners of homes and apartment houses in New York State got one slash in fire insurance rates this week and the prospect of another.

These were the two developments:

• The New York State Insurance Dept. approved a rate reduction of as much as 25%, a move that will save home and apartment owners around $6-million annually.

• Insurance Co. of North America prepared to post lower rates when the state insurance department ruled that North America may (1) make its own rates, and (2) make use of the data and rate filings of the New York Fire Insurance Rating Organization, a step long opposed by NYFIRO (BW—Aug.21'54, p86). In effect, the ruling means that fire underwriters in New York will be competing tooth and nail for business. Up to now, most companies have charged the same initial rate. North America has been pushing for lower rates throughout the country.

Construction: Unexpected Boom

Construction is going great guns—and happily confounding the experts all the way.

Around the end of last year about the most cheerful estimate of 1954 construction volume you could find was the government's—and that estimate forecast a 2% drop from 1953. By June of this year it was quite apparent that things weren't going to work out that way at all; the new government forecast changed the minus sign to a plus and called it a 2% increase for the year—and a new record.

Now, with the peak of the building season behind us, it looks even better than that. Figures through August on work already done show a 4% gain over 1953 (chart, p. 94); contracts for new work now on the books assure high volume for the rest of the year, and well into 1955.

• **Breakdown**—True, industrial building provides one persistent minus sign in the construction figures. The totals have been sliding off since early last year, when the emphasis changed from building the factories to equipping them. And public construction is just about holding its own.

But nearly everywhere else you look, the picture is rosy indeed.

Commercial building—stores, warehouses, office buildings—is booming; the total to date is better than 30% ahead of last year. Dollar outlays for residential building in the first eight months ran 6% ahead of the same period last year. They also beat the previous record (set in 1950) by 4%. You have to remember, though, that costs have gone up considerably since that time.

• **Suppliers**—This exuberant activity generally makes itself felt all the way down the industry's supply line. When construction is booming, construction's basic suppliers usually find business good, too.

This has been the case this year with the cement industry. It might have been true of the lumber industry, too—but a strike reared up at the worst time.

Here are the stories of lumber and cement.

1. Lumber Missed the Best Part

Through the height of this year's building boom, an important part of the nation's lumber industry was involved in a strike. The lumber strike in the Northwest began on June 21—just in time for the big building season—and is just ending now. Happily, neither the resulting shortages nor the price hikes were nearly so severe as might have been expected.

This is partly because the strike came in the middle of a soft market. The lumber industry has a long history of overproduction; this year, even in a building boom, inventories were piling up.

Furthermore, the strike didn't by any means shut down the whole industry—even in the Northwest.

• **In Spots**—The strike hit mainly the Northwest fir area, which produces roughly 35% of the nation's softwood

lumber. It was called by AFL and CIO unions in this area and was supposed to be industrywide. Yet it was not.

Many small mills are not organized. Some of these are one- or two-man mills; some are larger, working with perhaps 10 or a dozen men. During the strike, many idle union workers got jobs with small, unorganized mills, often under the minimum scale set by the unions for the industry. These mills put on second and sometimes third shifts; some worked a six-day week.

Probably the union officials were glad to see their men work for the little mills. As production built up, it put the heat on the big mills, which were losing sales. One large operator said that this turned into "a strike against the larger operators."

In addition, various settlements were made, especially in Oregon where the unions are not so strong, all during the strike. As August wore on, these settlements increased.

In all, one informed source guesses that output of fir lumber during the strike probably averaged better than 50% of normal.

• **Toll**—On plywood, production was even higher than in fir lumber. The reason is fairly simple: Some 15% to 20% of capacity in the plywood industry is in worker-owned mills. These operated right through the strike, with many going on a six-day week with overtime, and some hiring extra help. Also, the big plywood plants of M & M Wood Working Co. were not on strike (the workers belong to a different union), and some other big plywood mills settled early.

In the interior western pine areas, few mills were touched by the strike. Estimates are that production was cut only by some 15%.

Meanwhile, the southern pine industry was getting a much needed shot in the arm. Just before the strike, the South's lumber market was at its lowest point in a long time, with prices down 20% to 30% from their 1951 peaks.

When the strike came, prices jumped upward. Southern mills and yards found themselves invaded by northern and western builders. Business picked up fast.

• **Prices**—In the Northwest, a large part of the strike's affect on prices took place before it actually began, as buyers bought briskly to protect themselves. One type of fir lumber rose to $72 per 1,000 board feet just before the strike—from $62 six or eight weeks before. By mid-July the market settled to around $70—and that's about where it is today.

Plywood is firm at $85 for the bellweather quarter-inch panels. (During the late spring, plywood had tumbled to $76.) In the early part of the strike, some producers got $90 and even higher; but prices settled as production stepped up.

• **Well Off**—Two segments of the lumber market are particularly strong right now. Upper grades, such as finish lumber, are scarce because they are produced mainly by the bigger mills hardest hit by the strike. Most of the big mills have substantial order files that were booked before the strike, and they lost little of this business while the strike was on.

And structural timbers are hard to buy. Generally, only the bigger mills have the facilities and logs for this kind of work.

• **What's Coming**—Lumber producers now are concerned about the fall market. Normally buying slackens by mid-November because retail yards don't like to have much inventory on hand at year-end. This year, inventories have already been brought way down by the strike; still, many feel that prices will soften when the slack season comes.

On the other hand, logs will probably be short this winter—that may keep prices up. Normally, mills build a stockpile of logs—in log ponds or "cold decks"—in the summertime. But this year logs have not been stockpiled. If we have a late fall and winter, pretty good supplies can still come out of the woods. But either a dry fall that would bring forest fire hazard, or early snow, would mean trouble for sawmills and plywood plants that need those logs to carry them through the winter.

2. Cement Enjoyed It to the Full

The cement industry also had its strike troubles this year—a costly two-month strike in the East. But unlike the situation in lumber, the cement shutdown came in the middle of a strong market—and simply made it stronger.

August, September, and October always make up the peak period for demand. Now cement is selling out. Most companies have all the business they can handle, are just barely managing to meet demand, and aren't trying very hard to sell more. Says one big producer in Pittsburgh: "Business is as good as last year, and last year was a boom year." Says another in Chicago: "If we continue shipments at the present rate, our inventory will be gone in five days."

• **Expansion**—Some producers are modernizing and remodeling plants, but there isn't much real expansion on the books or in the planning stage despite booming business. The industry as a whole has enlarged capacity by about 18% since World War II; for the time being, it seems ready to stand pat.

One reason for slow expansion in the industry lies in the highly seasonal nature of the demand. Each year at this time, the industry finds itself struggling to meet a shortage or near shortage of cement. Then, when the market slackens, there's enough and to space for all uses.

Another reason is in the nature of the material itself. Cement is heavy, and transportation charges are high. So, instead of markets evening out nationally, they tend to stay local for individual plants.

And the really big additions to local demand come in spurts—in one-shot deals. For example, Ohio Turnpike construction created shortages this year in Ohio and Michigan. The Indiana Turnpike, which should be in full construction next year, will require 2.2-million barrels of cement, part in 1955, part in 1956—pointing to the likelihood of cement shortages in the Indiana-Illinois area next year. But cement plants are expensive to build, and companies aren't likely to expand to meet one big demand of this sort in any one year.

• **Price Lists**—Prices will remain stable for the rest of the year. The industry posts its price lists quarterly, then guarantees those prices for the following quarter. Most observers had expected a fourth-quarter increase in the East, partly because of the shortages brought on by the strike, partly because producers in the Midwest had raised prices

in July (while the East was on strike) and Eastern producers were expected to follow suit. But last week two pacesetters—Lehigh Portland Cement Co., largest Eastern producer, and Universal Atlas Cement Co., a U.S. Steel subsidiary and the nation's leading cement maker—both announced that their prices for the rest of the year will stand pat.

Housing Agency Reports More Windfall Profits

The federal housing agency came up this week with a somewhat surprising finding: Windfall profits were far more widespread in the postwar years than even the Congressional investigations of federal housing derelictions have shown.

That finding was the gist of a 40-page report on a months-long inquiry set in motion by Housing Administrator Albert Cole. Cole named William F. McKenna as special deputy to ferret out the whole story from the files of the Housing and Home Finance Agency itself. McKenna dug deep into the record of windfalls and other abuses that had been charged in the big government mortgage insurance programs designed to get housing built quickly after the war.

• **Results**—McKenna reported this week he had found 1,400 cases of windfall profits—cases in which corporations that built or invested in Federal Housing Administration rental housing got mortgages for more than the actual cost of building.

McKenna even went beyond the already publicized windfalls and fleecing of householders on home improvement loans. He listed other questionable practices on multifamily housing, and even on single-family houses built for sale. But the windfall cases under the now defunct Sec. 608 (providing for loans on emergency rental projects) still topped his list.

• **Recovery Test**—An initial test of FHA's ability to recover windfall profits has just got under way. FHA directed Sidney Sarner, president of Linwood Park, Inc., of Fort Lee, N. J., to call a meeting of preferred stockholders to oust the present corporate directors and elect new ones chosen by FHA.

Sarner refused, and FHA acted on its right to call the meeting itself—setting the date for next Wednesday in Hackensack, N. J. The corporation then sought an injunction.

• **Blame**—McKenna centered his charges of malfeasance in the windfall cases on Clyde L. Powell, former assistant commissioner in charge of rental housing. Powell has countered with a denial that there is any evidence that he got money in connection with any official act.

Seagoing Liquefied Gas

A new U. S. process may bring Mid-East fuel to London. It's definitely in the works for supplying Chicago stockyards from the Gulf area.

A deal for use of a newly developed American process to supply London with cheap liquefied natural gas from the Middle East got as far as the feeling-out stage this week. A three-man British group, operating "with the blessing of the British government," met in Chicago with W. L. Morrison, who developed the new method (BW—May 15'54,p146) and is preparing to use it to haul liquefied natural gas from the Gulf Coast to the Chicago stockyards.

What sort of a deal might be worked out—a licensing arrangement, possibly a syndicate—is still uncertain. But the Britishers show great interest in the liquefaction process, the special barges that Morrison has had built to haul the stuff, and other features of his project.

• **Survey**—The British mission came to the U.S. last week and plans an extended survey tour. It includes L. J. Clark of the North Thames Gas Board, which is a part of the setup that currently supplies London with gas manufactured from coal. His two companions are Andrew Morrison and D. Holmes, private industrial engineers. Among other things, they will look into use of underground storage facilities, and study U.S. gas operations at several points.

The group talked in Washington with Carl Flesher of the International Bank, who has done independent research on the feasibility of moving gas by tanker—again with the idea of getting Middle East gas to London. He thinks London could get gas this way for about half what it pays for the manufactured product.

You can see why London is interested in the idea when you take a look at the tremendous quantities of natural gas that the oil producing areas of the Middle East are flaring because there's no market for it after it comes up with the oil. The amount is put at some 500-million cu. ft. per day.

• **In the Works**—In the U.S., many gas producers are also studying the feasibility of moving liquefied natural gas by barge or pipeline.

Morrison, a Chicago engineer, already has his setup under way for hauling the liquefied gas up the Illinois and Mississippi Rivers to the Union stockyards in Chicago. He has had storage barges constructed by the Ingalls Shipbuilding Corp. at Pascagoula, Miss., to do the hauling.

The method is this: Gas from producing fields in the Gulf Coast area is liquefied and loaded on the barges in insulated steel tanks (balsa wood is used inside for insulation). Then it's moved up the rivers at atmospheric pressure, at −258F.

In Chicago, the gas will be vaporized and used for power generation. The tremendous amount of refrigeration obtained in the vaporization process will be used in chilling and cold storage of meat. Use of the gas as a refrigerant is expected to bring in an additional 5¢ per 1,000 cu. ft. beyond what it brings as a fuel.

• **Cost-Cutting**—Morrison and his associates believe that the cost of barges, towboats, and liquefaction, though substantial, will be well below that of pipeline transportation. They point to some of the corners that can be cut. On the northward trip, the towboats can operate, they say, largely from the small amount of natural gas evaporating from the storage tanks. For the return trip, some of the liquefied gas will be kept in the tanks to provide fuel.

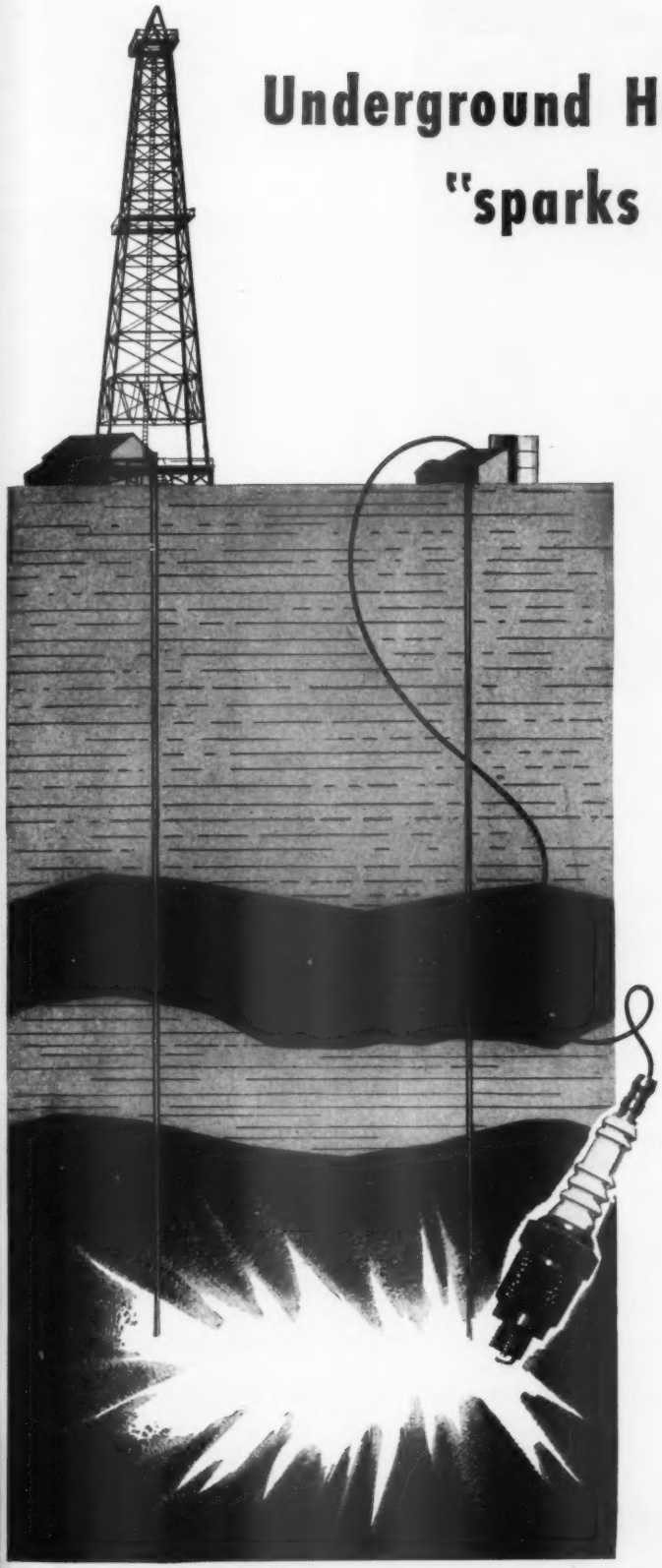
Under present plans, the barges, operating in teams of two, would be able to deliver some 18-million cu. ft. of gas per day in Chicago. Morrison looks for a growing market for the gas as a refrigerant in frozen food plants and meat packing houses.

Morrison sees a barge transport system as more adaptable than a pipeline—it's not anchored to any particular region of gas supply nor to any one marketing region, and it can supply areas where demand for gas isn't big enough to justify a pipeline. Careful attention, he says, has been given to making this method of transporting liquefied gas completely safe.

• **Land and Sea**—Tanker transport has a big part in the plans proposed by Flesher of the World Bank for bringing Middle East gas to London. He has one plan for a pipeline from Kuwait through Saudi Arabia to the Red Sea below the Suez Canal, with tankers taking over at that point. An alternate plan, requiring a smaller investment, would use tankers all the way.

Flesher figures about 100-million of the available 500-million cu. ft. per day would go to run liquefaction plants and ships, leaving about 400-million to be supplied to London or other points. Either of his plans, he figures, would lay down gas in London at a price around 50¢ per 1,000 cu. ft. That would be about half the cost of the manufactured gas that London now uses.

Underground Heat Wave "sparks up" sleepy oil



In most "worked-out" oil fields, geologists estimate that more than 50% of the total amount of crude oil still remains inert within the "sands" around the old wells, obstinately resisting conventional methods of recovery.

Recently Sinclair scientists developed a new method of using underground heat to release such oil so it can be pumped to the surface. These field experiments, started in 1948, were the first of their kind to be tried by any major oil company. In 1953 Sinclair was granted a U. S. Patent covering this new technique.

Gas and air are pumped deep into the earth and ignited by a spark plug, causing a wave of fire which pushes the valuable oil toward the producing wells. This "underground heat wave" may increase Sinclair's recoverable crude oil reserves and add greatly to the value of old oil fields still under lease. It shows promise, too, of solving one of the oil industry's most challenging problems; recovering some of the estimated 500 billion barrels of oil locked in the nation's shale deposits.

Sinclair's "underground heat wave" is another indication of the Company's continued leadership in the highly competitive oil industry.

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BUSINESS BRIEFS

Claims that cigarettes are not harmful or that they are not irritating have been hit by the Federal Trade Commission. In its harshest move so far against tobacco industry advertising, FTC has demanded voluntary compliance with a new and strict set of rules banning such claims. The commission has invited the industry to state its side before the rules are put into effect.

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Natural gas rate freeze will be reconsidered by the Federal Power Commission. The commission will hear arguments next week by the independent producers protesting the order freezing their rates at the July 7 level (BW–Aug.21'54,p29). Meanwhile, FPC refused to suspend the order.

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Container Corp. of America spread out some more when it picked up 32% of the common stock of Mengel Co.—190,000 shares. Mengel is becoming known as a furniture maker, but 40% of its business is still in corrugated boxes. Container Corp. directors are considering merging the companies (BW—Aug. 28'54,p49).

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White Motor Co. is suing International Harvester, charging infringement of its five patents on forward-tilting cabs for motor trucks. The suit, filed in an Illinois federal court, is similar to one brought by White last year against Diamond T. Motor Car Co. White wants an injunction and damages.

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It is hay: $500,000 apiece has been allotted to Missouri and Kansas by the Agriculture Dept. for emergency relief of drought-stricken farmers. The funds will be used to bring in desperately needed hay.

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Mail-carrying railroads have protested to the Civil Aeronautics Board against the Post Office plan to fly first class mail at the regular 3¢ rate. They say that expansion of the test program could force them to abandon some passenger trains. Meanwhile, eight major airlines have urged the Post Office to adopt a new method of figuring rates. Cost to the PO: $2.7-million a year.

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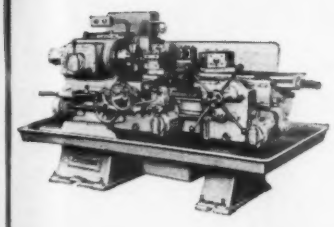
Color TV costs started down this week when RCA introduced its new 21-in. tube. The new big color tubes will be sold to the trade at around $175 (about the same as earlier 15-in. tubes); RCA's own sets will retail between $800 and $900, though the company hopes to get them down to $500 eventually. A one-third cut in the circuitry made possible the lower price.



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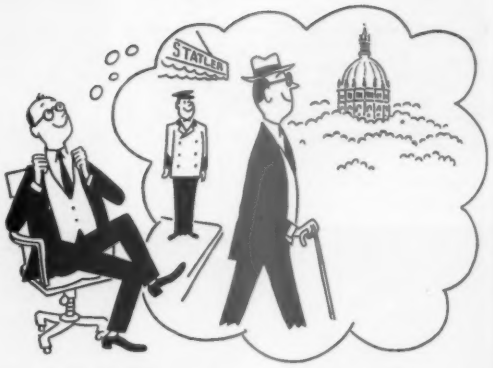

2. "Now, Hartford is my home-base town—I go there now and then. I'll see that grand new Statler when I visit there again. I hear it's super-modern. (Statler always does things well.) And completely air-conditioned—a most *comfortable* hotel!

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WASHINGTON OUTLOOK

WASHINGTON BUREAU
SEPT. 18, 1954

Look beyond the new budget totals (page 25) to the implications:

No early war is expected, despite what's happening around Formosa. The big cut for fiscal 1955 is in national security—some $3-billion below the estimates made last January, $4.3-billion under fiscal 1954, and $8.4-billion under 1953's Korean peak. The war expectation must be rated "low."

Business here at home is expected to be good. Eisenhower was confident enough of that to go ahead with new cuts in spending. When you balance out the cuts against budget increases, you come up with a net slide-off from the January estimates for 1955. It amounts to some $1.6-billion. Most of the extra spending scheduled for nonmilitary activities comes about automatically through the operation of economic props—price supports, home financing, and the like.

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The Democratic attack on the budget hits these two points: Eisenhower is taking chances on war (cutting defense in the face of threats) and on trouble at home (a new business downturn resulting from the extra spending cuts). These are the big things the politicians will hammer. But there are other aspects of the budget revision you should have in mind as you make business plans.

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There's a retreat on the budget-balancing front. The deficit forecast has been upped, from $2.9-billion in January to $4.7-billion. Avoiding this would have meant bigger spending cuts than those Eisenhower accepted. The Administration, while economy-minded, weighs the business impact.

A new request for a higher debt ceiling is probable. The debt ceiling, now $281-billion, drops back to $275-billion June 30, the end of this fiscal year. The debt then will be $274.5-billion, and no one now expects a budget balance next year, fiscal 1956.

Reason for the decline in revenue is played down. The estimates slid $3.3-billion since January. The budget revision explains $1.1-billion as the excise cut that Congress voted over Administration objections. The other $2.2-billion, not explained, results from the business slide.

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There's some economic propping in the new budget, which counteracts the big cuts, confined to defense and related items.

Home mortgage money will be kept easy. The government's market for mortgages may pour out $500-million-plus over January estimates.

Farm price supports will add another half-billion—above-market loans made to wheat, cotton, corn growers, etc., to store surpluses.

And more dollars are going out for other things—Export-Import Bank loans (boosts to foreign trade), Commerce Dept. services, payments under Social Security, etc. Rises total nearly $2.4-billion.

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New rules for defense contract renegotiation will be issued soon. The Renegotiation Board is working them up now, based on the new renegotiation law. More small contracts will be exempted. So will more so-called shelf items, standard products, which are carried in stock.

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A policy shift on offshore procurement is indicated. When EDC was the big aim in Europe, the U. S. poured lots of money into plants, with the idea of building up military production of the allies.

The arms idea simply isn't working out. Even ammunition projects are far behind what can be done in the U. S. And plane production abroad is in much worse shape. Europe hasn't developed mass output techniques.

Fresh studies are being made abroad. When the reports are all in, you may get recommendations for a complete revamping of U. S. buying plans. The idea with most support is that the components be produced in the U. S., with the foreign operations limited to assembly and repairs.

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The big split within the CIO is about to be highlighted again.

The United Steelworkers hold their convention next week. The test is between USW Pres. McDonald and CIO Pres. Reuther. McDonald doesn't like Reuther, so threatens to pull the Steelworkers out of CIO. He might move to repudiate the constitutional provision that makes USW a part of CIO. He won't pull out at this time. But his threat to "take a walk" will weaken Reuther's CIO leadership.

Labor policy still is a point of friction within the Administration. Labor Secy. Mitchell is regarded as Eisenhower's top adviser on labor. But his views constantly run into opposition from Commerce Dept. officials who would give states a bigger role in labor-management relations at the expense of federal jurisdiction. It's a situation that may bring a blast from the AFL's Los Angeles convention.

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The Supreme Court reconvenes Oct. 4. There are 340 cases already on the regular docket, many of them important to business.

You may get a new decision on so-called fair trade laws, under which manufacturers set retail prices of trademark goods. The case involves New York and New Jersey laws and comes up at a time when the fight between fair traders and discount houses is hot.

Other big questions: Do boxing and the legitimate theater come under the antitrust laws? Are state overloading penalties applicable to interstate truckers certified by the ICC? Can public bodies condemn land for later resale to private interests for urban redevelopment?

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Note the new campaign gimmicks showing up, competing with the old baby-kissing, hand-shaking technique for the voter's favor.

On the Democratic side, candidates have a new manual on the right and wrong way to put on a TV show or radio broadcast. It also gives hints on the most effective advertising, whether in papers or on billboards. The Americans for Democratic Action has a book out—speeches and articles by liberal Democrats.

On the Republican side, the campaign kit includes learned discourses on all issues, from taxes to foreign policy, for the eggheads. The same points are made via the comic book approach for those who want it light.

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Segregation candidates won in Georgia—the old Talmadge faction, which opposed the more moderate, regular Democrats.

A test is ahead in South Carolina. Ex-Governor J. Strom Thurmond, the states rights contender for the presidency in 1948 is a write-in candidate against Edgar Brown, supported by the Democratic National Committee, for the Maybank Senate seat.

Maine was a surprise. The GOP had figured on another clean sweep. The Democrats give the results a national interpretation.

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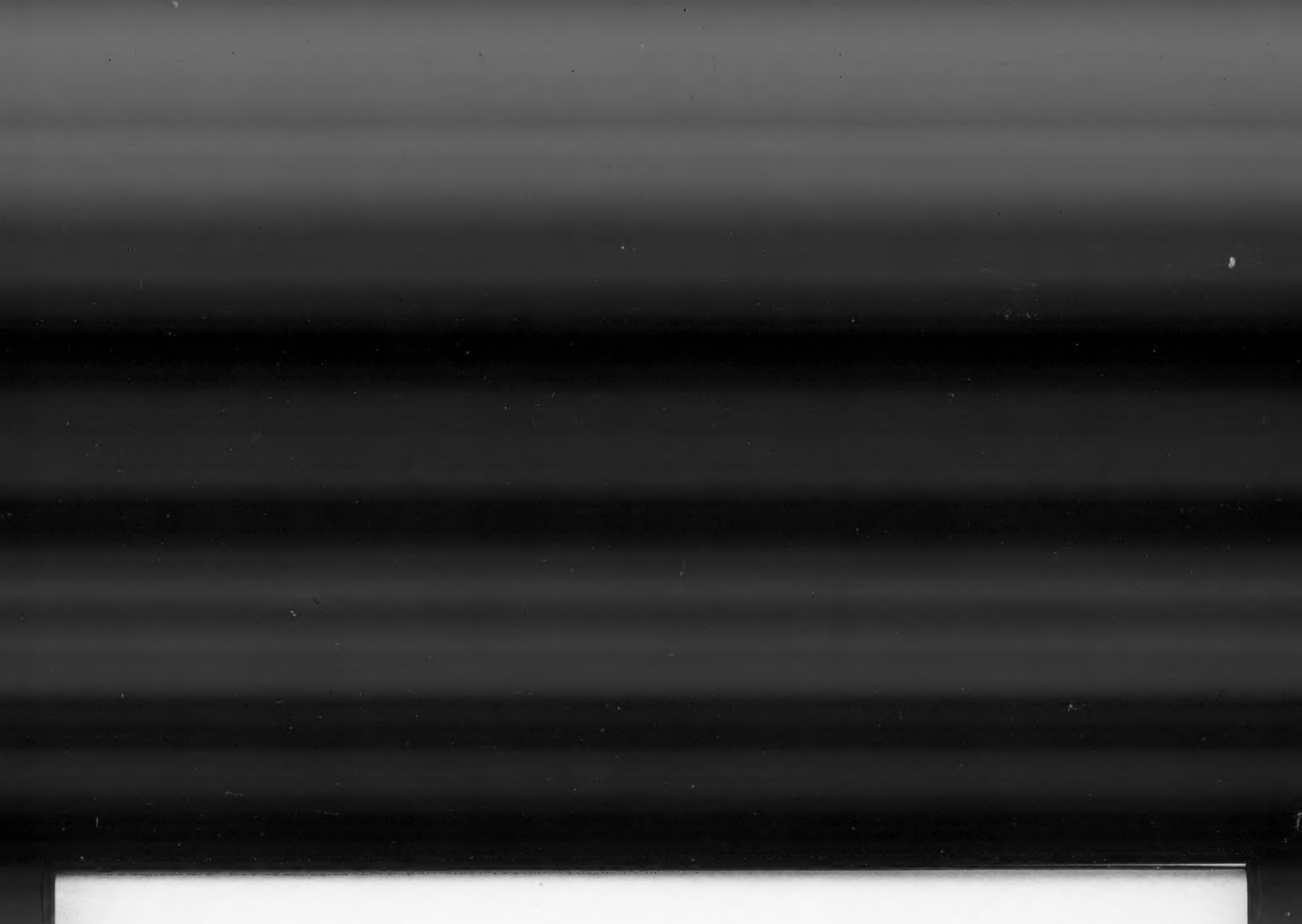

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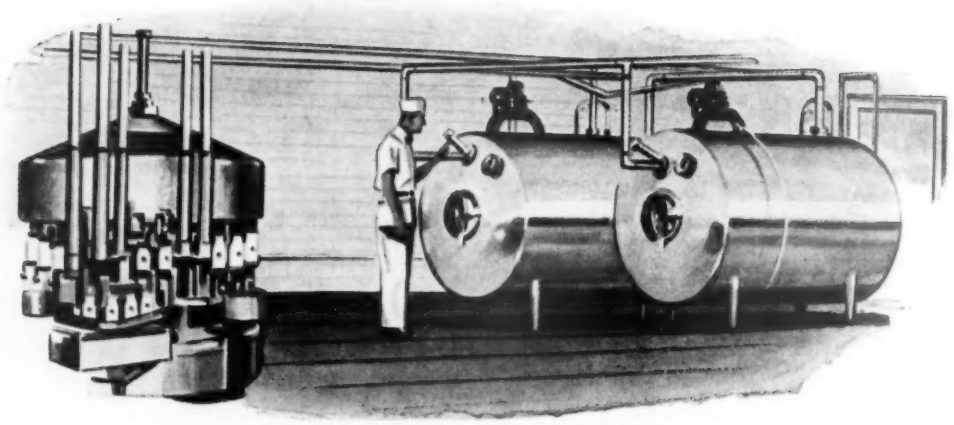

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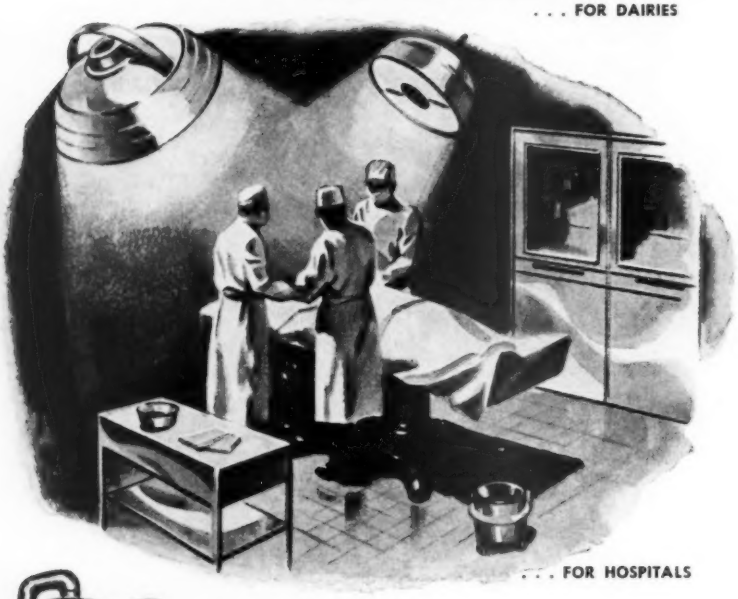

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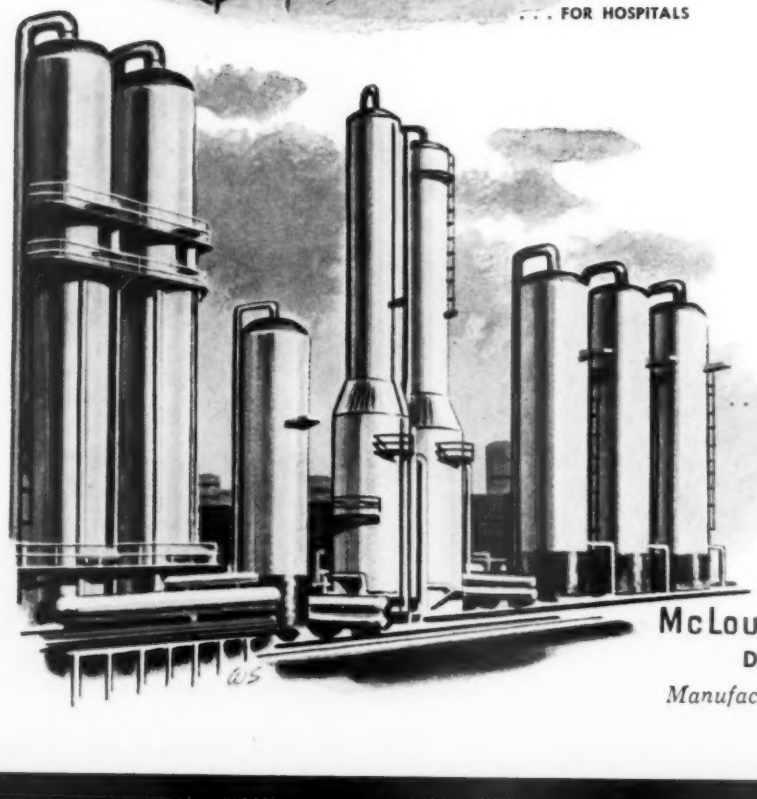

. . . FOR THE CHEMICAL INDUSTRY

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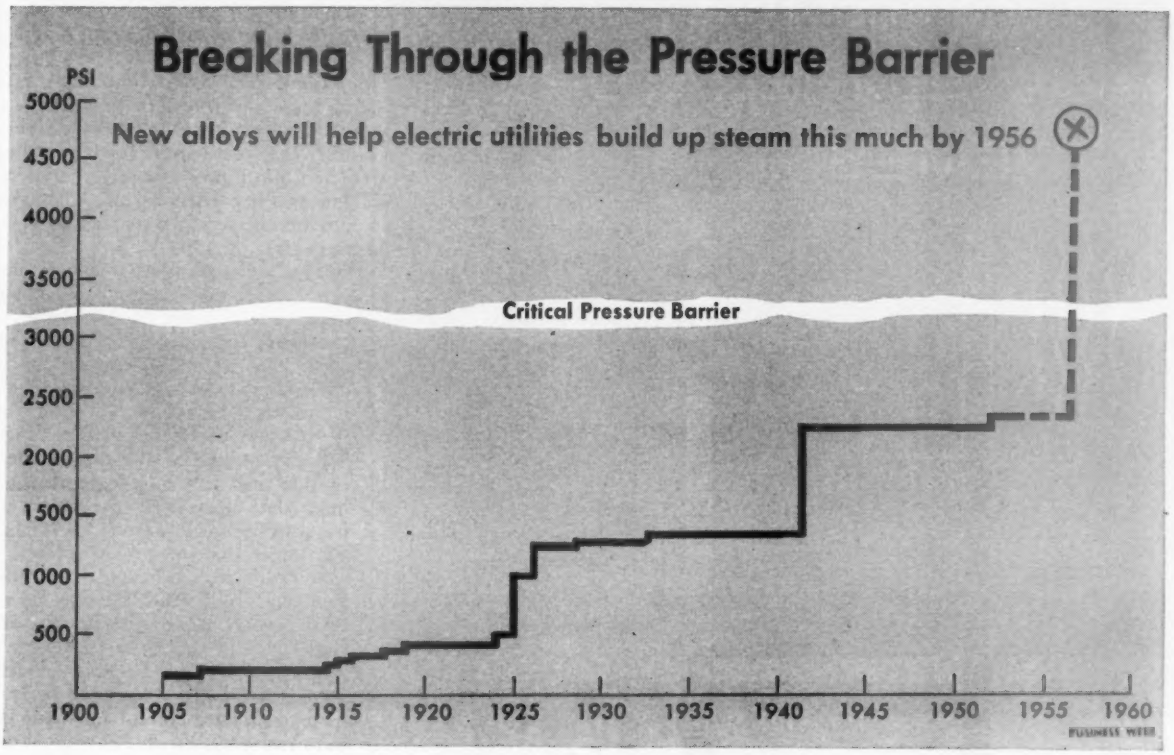
DETROIT, MICHIGAN
Manufacturers of Stainless and Carbon Steels



For Cheaper Steam Power

Electric power men are among the most cost-conscious in industry. By using more and more efficient plants, they have been able to hold and sometimes even to cut the cost of electricity during a period in which the cost of living has more than doubled. Utilities are proud of this fact. With some, it has become an obsession.

It is this search for greater efficiency that has taken the industry up the steps of higher pressure shown in the chart above. One of the fundamental principles of thermodynamics is that the higher the temperature of the source of energy and the lower the temperature of the region to which you reject waste energy, the more work you get out of a given amount of energy. But when steam gets hotter, the pressure goes up and you have to build stronger equipment.

Now, after a period in which metals have held steam pressures and temperatures on a plateau, the engineers are about to make another huge jump. The industry is watching two camps of engineers who are readying equipment for the move. It will probably be several years before the full commercial significance of their work can be determined. But here's what's happening right now:

• Philadelphia Electric Co. is planning to build what it calls "the world's most efficient power station." It will use a 275,000-kw. turbine generator unit, the largest single-shaft machine ever ordered. It will operate on steam at 5,000 psi. and 1,200F, the highest temperature and pressure ever projected. The turbine generator unit will be built by Westinghouse Electric Corp., the steam generator by Combustion Engineering, Inc.

• Ohio Power Co., one of the principal companies in the American Gas & Electric System, is building the first commercial unit to operate at these extreme pressures. It's a smaller unit than the one for Philadelphia. It will use a 125,000-kw. machine and operate at 4,500 psi. and 1,150F. General Electric Co. is building the turbine generator; Babcock & Wilcox Co., the steam generator; and De Laval Steam Turbine Co., the boiler feed. The plant is expected to start operations during the first part of 1956.

• **Pioneers**—These superpressure plants will probably not have rivals for a long while. The rest of the industry will watch for results before any more are ordered. Although the theory of such plants has been well known for many years, a lot of things can come up when you try to put theory into commercial operation. The builders will have to use special new alloys to withstand the high heat and high pressure—and using new materials even at normal temperatures and pressures can be tricky.

• **Impetus**—There are several reasons why the jump is being taken at this time. The rising cost of fuel is perhaps even more important than the availability of the new alloys. That's because the fuel that is burned in a power station accounts for about 80% of its total operating costs. Fuel for a good sized boiler for just one year can run pretty close to the cost of the boiler itself. A saving of even 1% when you are burning 500,000 tons of coal a year mounts up to a sizable sum.

The new Philadelphia plant will burn somewhere between ½ lb. and ¾ lb. of coal for each kilowatt hour of electricity produced, depending on the type of coal used. The national average now runs about 0.9 lb. per kwh.

The initial cost of the plant required for this efficiency is not out of line;

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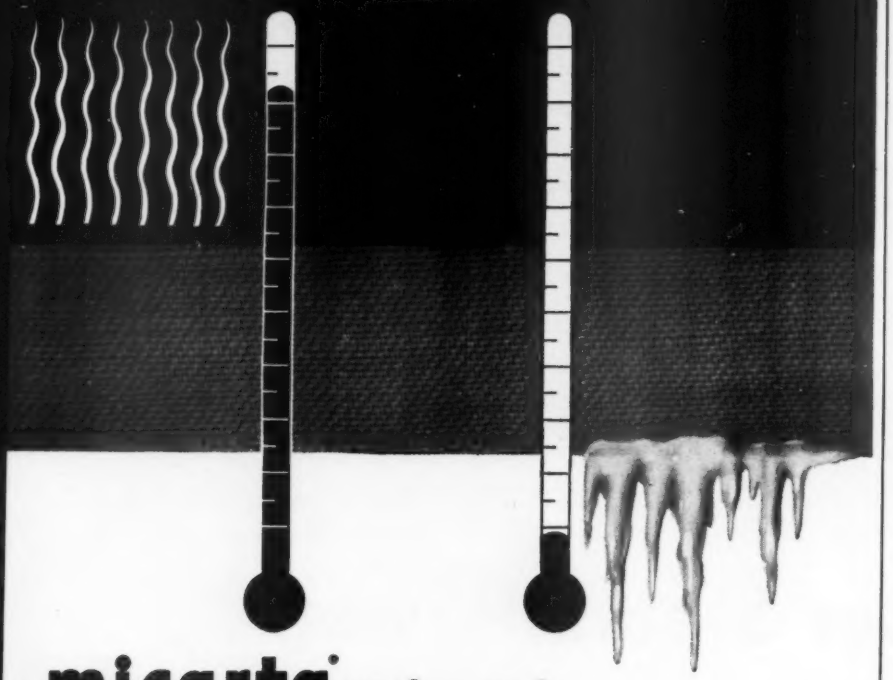

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City_____ Zone____ State____

BW-9-18-54

the Philadelphia plant will cost about $45-million. That sounds like a lot of money, but when you break it down to kilowatt cost, the usual measure, it isn't. It will cost about $164 per kw. Postwar plants have been running $160 to $190 per kw.

• **Limit**—Size is an important factor in these superpressure plants. To use very high pressures and temperatures effectively, you need a really big unit. The Ohio Power Co. job is considered the smallest practical size. The next question becomes: How big should your unit get?

The limits on size at the moment seem to be more economic than technological. A utility doesn't like to put too many eggs in one turbine. There are bound to be downtimes when machines are out for inspection. A big unit represents a big chunk of capacity and it can't stay out of service very long.

Some utilities work with a rule of thumb that says no one unit should hold more than 10% of capacity. To use a turbine generator of say 200,000 kw. under this rule, you'd have to be supplying 2-million kw. to customers. But the steady rise of electric power consumption keeps making the 10% slice larger.

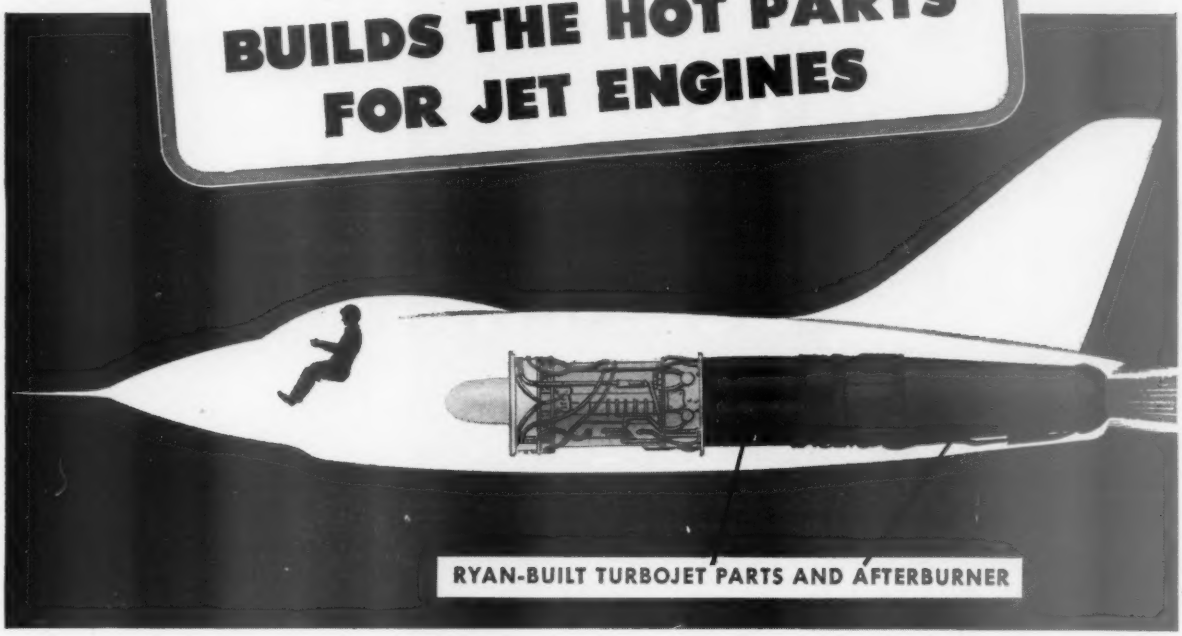
The 275,000-kw. machine for Philadelphia is now the largest on order. If used to produce current for home consumption only, this boiler-turbine combination could supply the electrical needs of over 3-million people. Other machines of 250,000 kw. and 260,000 kw. are also on order, and even bigger units are under consideration. Suppliers have talked about compound units of 500,000 kw.

• **Fabulous**—On the technical side, some postwar units already in operation are pretty fabulous. In some, 1½-million lb. of steam pass through the turbine each hour. It expands to a volume 2,600 times its original form in the fraction of a second, blasts through the turbine at about 12 times the velocity of a hurricane. In a snap of the fingers, steam is cooled from 1,100F to 80F.

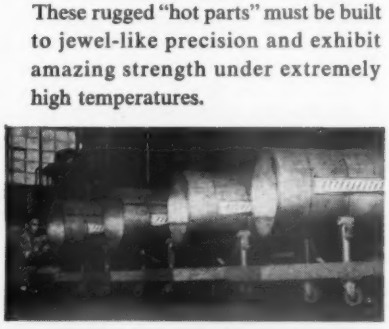
On the big new Philadelphia machine, the top speed on some of the larger turbine blades will reach 1,070 mph., well over the speed of sound. There'll be a centrifugal pull of more than 50 tons on each such blade.

• **Intricate**—In the biggest units now operating, water is heated in a boiler and released through a valve into the turbine. At this point the relationship between pressure and temperature is important; one doesn't mean very much without the other. That's because as the steam passes through the turbine it gives off energy through heat and pressure loss to spin the turbine. The inlet temperature and pressure determine how much steam will have changed to

RYAN
BUILDS THE HOT PARTS FOR JET ENGINES



The startling performance of America's great new fighters and bombers depends largely upon the knowledge and skill of the manufacturer of their jet engine components. These rugged "hot parts" must be built to jewel-like precision and exhibit amazing strength under extremely high temperatures.



Ryan Afterburners for Westinghouse J-46

Ryan is a pioneer in this field, developing the first American jet engine afterburner in connection with the Navy's first jet plane, also built by Ryan. Today, Ryan leads in the fabrication of sheet metal turbojet components and afterburners because of a unique combination of advantages: long experience in high temperature metallurgy – extensive know-how in forming, welding and machining heat-resistant alloys – the industry's most modern array of high precision machines. Few plants anywhere have the necessary equipment, methods and know-how for this specialized work.

With these facilities, Ryan is building afterburners and jet engine parts for General Electric, Westinghouse, Pratt and Whitney Aircraft, Wright Aeronautical and others. Ryan's $4 million worth of modern production tools produce high temperature jet engine components used in North American F-86 and F-100 Sabres, Boeing B-47 and B-52 Jet bombers, Convair F-102 fighters, Douglas F4D Skyray fighters and A3D attack bombers and McDonnell F-101 fighters. Currently, Ryan is building six different types of afterburners.

As the only maker of jet engine parts which also designs, builds and flies jet aircraft, Ryan is uniquely qualified for this exacting work. In virtually *every* field of aircraft development and production, Ryan is better prepared to solve the complex engineering and fabrication problems posed by the high speed air age.

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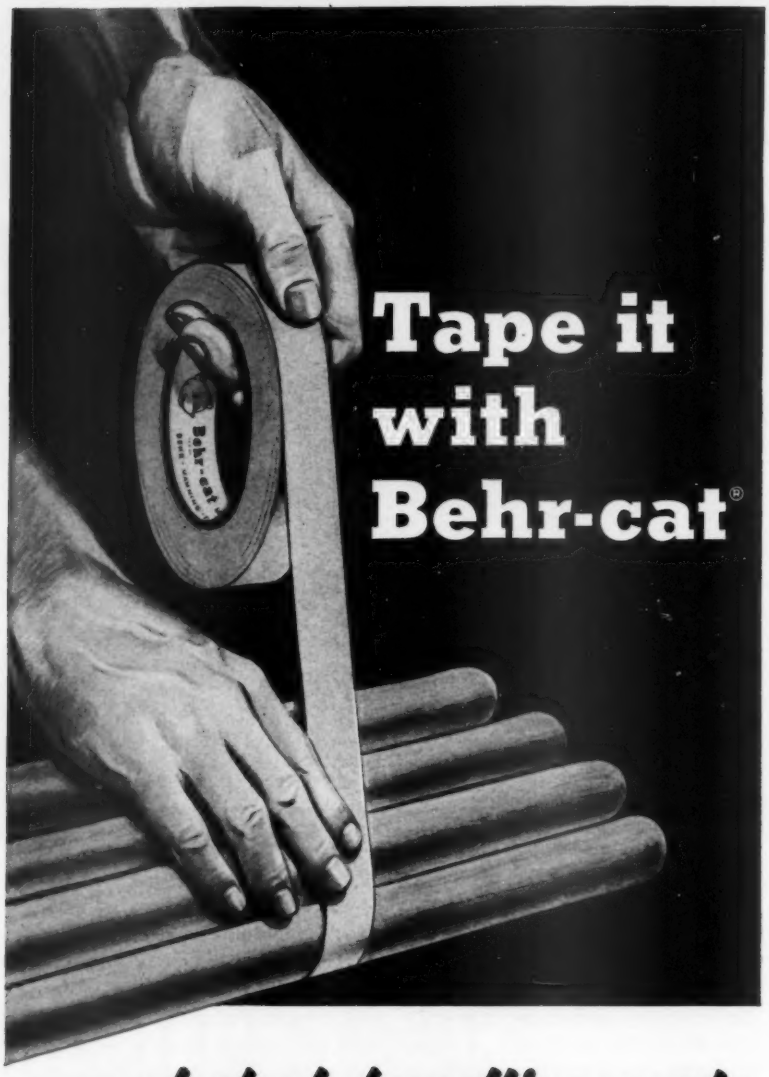

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T-3

water by the time it reaches the last turbine blades before passing into the condenser and changing entirely into water. If the amount of water in the steam that hits the last turbine blades is more than 12%, it can chew up metal.

In conventional units, the steam that enters the turbine is a dry gas. The particles of water in it have been spun off in a drum called a separator. The separation is possible because of a difference in density between water and steam.

• **The Barrier**—But as the pressure in the boiler increases, a cubic foot of water weighs less and less while a cubic foot of steam weighs more and more. When the pressure reaches 3,206 psi. (called the critical pressure) the water and steam weigh the same and will not separate. Above this pressure water turns into steam without boiling.

Theoretically a great deal has long been known about steam at supercritical pressures. Much of the knowledge came from a unit built by Babcock & Wilcox in 1930 for experimental purposes at Purdue University. But many refinements had to be made for commercial use. Two developments, which actually appeared in the early 1920s, have now been polished up to a point where engineers can tackle the critical-pressure barrier:

Feed water heating. It was found that if some of the heat was bled out of the turbine and used to heat water returning from the condenser to the boiler, there was an increase in over-all efficiency. Additional bleedings of the turbine increased efficiency further, but at a decreasing rate. The maximum number of feed heaters is now eight; Philadelphia will try nine.

Reheat. It was also found that if you took away some steam from the turbine after it had practically completed its work, say a quarter of the way through, and passed it back to the boiler for reheating, the thermal efficiency of the turbine could be stepped up considerably. In effect, it would reduce the amount of water in the steam hitting the last turbine blades.

• **Atoms**—In any discussion of electric power these days, atomic energy is a factor to consider. Are the big supercritical plants the last of the line? The equipment builders say no. From a long-range point of view, they say, our supply of fossil fuel is limited. The day will come when we'll be as hard pressed for coal and oil and gas as are the Europeans today. But, until the shortage becomes much more critical and until the cost of an atomic power plant comes down (it's now several times the cost of a steam plant on a per kilowatt basis), big units such as those now building will supply the bulk of your electric power wants.

LOOK AT YOUR WINDOWS

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How the TREMCO MAN can help you cut sash maintenance costs

Most of us usually look *through* windows—seldom *at* them. Yet windows are the costliest part of a building—and subject to recurrent maintenance expense. Sash maintenance is a business all its own, with its own vocabulary, crafts and techniques...*and its own experts.*

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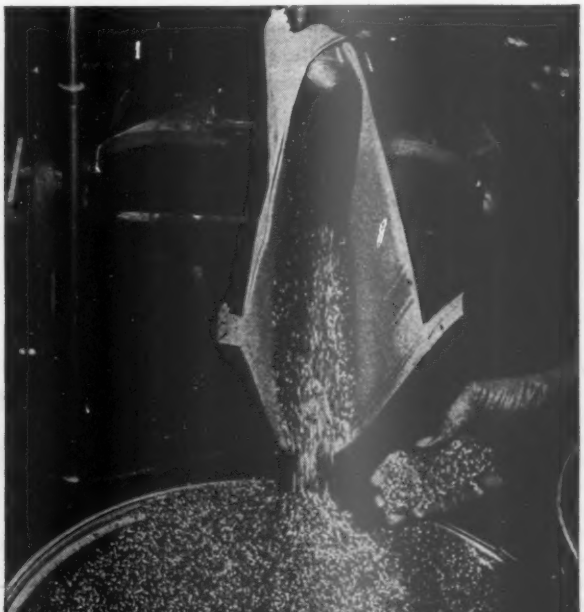
ROOFS **PAINTING** **SASH** **FLOORS** **WATER REPELLENCE**

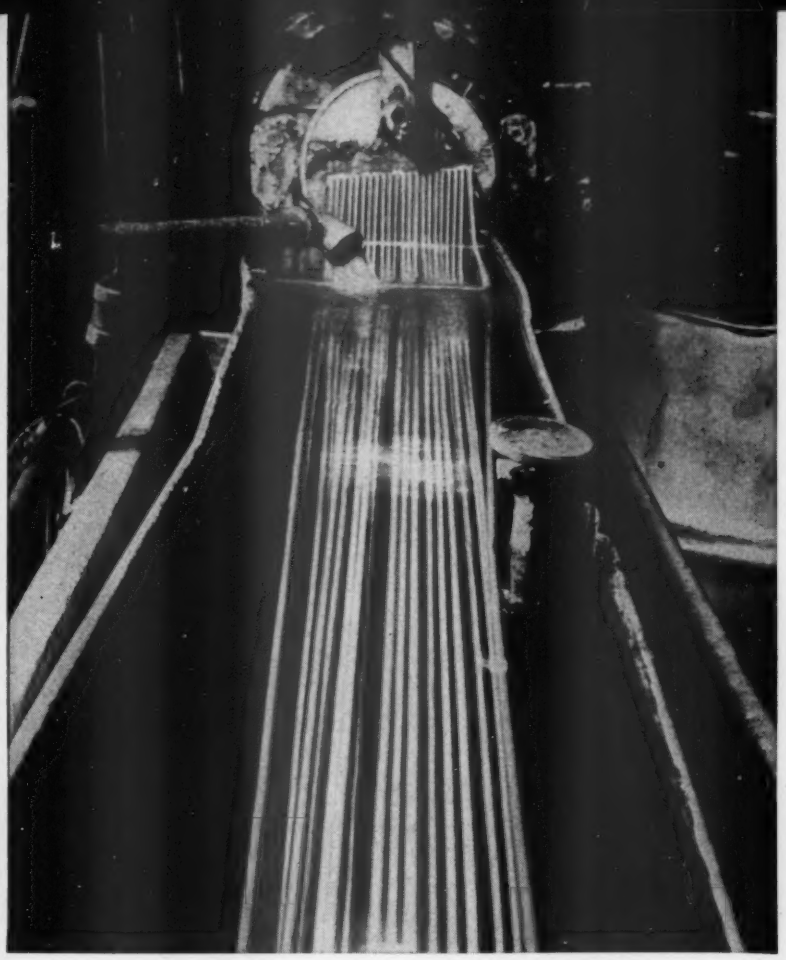
1 Scrap plastics, growing stepchild of the plastics industry, is getting bigger every year. Drums of scrap (above), reclaimed from fabricators, are first sorted for type and color.

2 Giant blender mixes powdered scrap with pigment. One machine can handle up to 5,000 lb. of scrap plastic at a crack. Plastic is then heated, goes to . . .

4 Some oversized pieces have to be cut on machines like this before getting to pellet stage. Scrap is then poured . . .



5 . . . into shipping barrels or 100 lb. sacks. Reclaiming cuts cost to half that of new plastic.



3 . . . extruder, which squeezes it out in long cables. Cables are later pulled through cooling water bath, then hardened and chopped into pellets.

Building an Industry Out of Scrap Plastic

The men at work in the pictures above are in a stepchild business. But it's a rich stepchild, and getting richer. The business: scrap plastics.

It's parent, the richer, more glamorous plastics industry, has had scarcely a kind word to say about this offspring since it was born. One reason: The scrap company often takes a cut into a market that would otherwise belong to the producer of virgin plastic.

• **How Long?**—Some of the big plastics producers shrug off the scrap collectors, say they're not making much of a dent in the market and that they'll be gone as soon as the big producers can get production up high enough to meet an ever-growing demand. In one respect, that's true: Scrap business is a drop in the bucket when it's put alongside its booming parent. Last year, for example, U.S. industry produced about 2.6-billion lb. of new plastic, while the scrap companies accounted for less than some 100-million lb.

But it is unlikely that the number of companies handling scrap in the U.S. will diminish. In 1952, there were 23 of them—some small, some very large. This year, there are 35.

And when you look at one of the big companies you see none of the things that tip off a hand-to-mouth operation.

Take the case of H. Muehlstein & Co., New York. This year, Muehlstein's scrap business will gross around $20-million. The company has six warehouses across the country, where the plastic that comes in is sorted and reclaimed for future use (pictures). It has three laboratories that keep on the lookout for new uses for reclaimed

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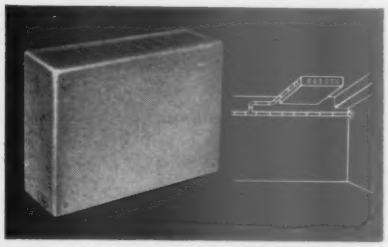

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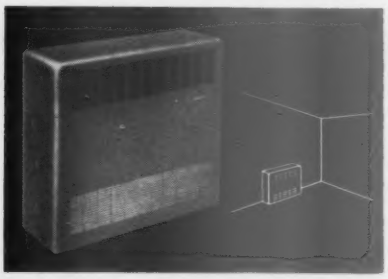
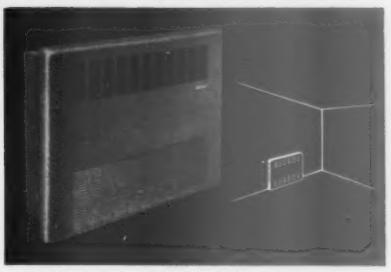


32,000 to 115,000 Btu per hour (basic rtg.)



Carrier announces a line of Cabinet Unit Heaters for commercial buildings, auditoriums, recreation halls, public schools and similar buildings having lobby, vestibule or special space heating problems.

Here are big-capacity Cabinet Unit Heaters offering gently fan-propelled heat output. Construction, operating and control features are many. Efficient performance and long life are Carrier-assured.

Carrier Cabinet Unit Heaters are designed for ceiling-mounted, wall-hung, inverted wall-hung, exposed or semi-recessed floor installation. For full information, write to Carrier Corporation. Syracuse, New York.

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plastic. The company employs about 200 people.

• **Sources**—Here's how the scrap company fits into the industry picture. Most of its scrap comes from companies that mold and fabricate plastic products; it's the equivalent of what the steel industry calls plant scrap. The scrap is not just old used bits of plastic—so much so that the reclaimers hate the very word "scrap," and are trying to drive it clear out of their industry.

The plant scrap gets into circulation this way. Say a company is making plastic radio cabinets. After it had run off several hundred thousand, it will have a batch of scrap on its hands. It paid some 30¢ a pound for the stuff when it was new. It doesn't want to throw it away, just because it is scrap.

In comes Muehlstein, which pays a few cents a pound for the scrap, carts it off to one of its warehouses. Here, it is sorted by type and color, and reclaimed.

• **Process**—The reclaiming steps are performed by three machines. A grinding machine breaks the plastic into powder. Then the powder is sent to a giant blender that mixes the powder with pigment. One blender can handle 5,000 lb. at a crack.

From the blender, the mix goes into a hopper where it is heated, and sent to a big extruder. It comes out in long, spaghetti-like strings. These are pulled through a water bath that cools them and makes them hard. Then the strings are chopped up into tiny pellets and packed in cartons or 100 lb. sacks.

• **Spoilage**—Throughout the process, the reclaimer has to be careful of contamination. If one of his inspectors back at the initial stage slips up and lets a couple of unrelated plastics get mixed together, he is apt to wind up with a batch that cannot be sold. That's because such a mix is likely to peel apart once it has been fabricated.

Muehlstein gets around this by making chemical tests on each new shipment. If the tests show contamination, the shipment is rejected, sent back to the plant where it was bought.

• **The Uses**—The company that buys those 100 lb. sacks of reclaimed plastics from somebody like Muehlstein can't expect to use them for every product in its line. For one reason, the reclaimer can't produce pellets in the wide range of colors that the new plastic producer can.

If the molder wants to produce, say, toy automobiles in a particular shade of red, he's probably going to have to go to someone other than the reclaimer. But if he's making toys or novelties and isn't particularly fussy about the colors he has to pick from, chances are he will pick up his raw materials from a reclaimer.

The plastic will cost him less than

AZOGRAPH—

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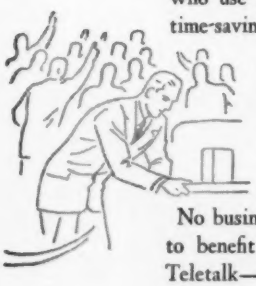

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it would if he were buying new stuff. A pound of reclaimed polystyrene, for example, will cost him about 15¢. If he were to buy it new, it would cost about 32¢.

He knows that he is not getting the same quality plastic. And if he is making something fancy, like refrigerator cabinets or sports car bodies, he won't bother with a reclaimed raw material.

But if he is making plastic pipe or toys—something that costs little more than the raw material itself—he is a likely customer for the scrap company. Indeed, if he could not use reclaimed plastic as his raw material, such a producer might find it more economical to use a nonplastic material for his product.

• **The Name**—The scrap companies dislike the word "scrap" itself because it connotes used materials—plastics that have been discarded, collected, and melted down.

Reclaimed plastics, of course, are not products of the junk man. A company like Muehlstein won't buy such stuff, because it doesn't know what it's getting. Throwing some undefined chemicals into a tub of reclaimed plastic could ruin the whole batch.

PRODUCTION BRIEFS

Kennametal, Inc., Latrobe, Pa., thinks it has the key to the jet engine of tomorrow. It's a power plant—more than twice as powerful as any now flying—that can operate at temperatures up to 1,900F, about 300F higher than conventional engines. It was built to demonstrate the heat-resistance of the company's super-alloy, Kentanium (BW—Sep.20'52,p66).

•

Expanding and moving: General Electric Co. is looking over Goodall-Sanford's textile plant in Sanford, Me., which is up for sale. GE wants to make more room at its Lynn (Mass.) River Works plant. If it buys in Maine, the company is expected to move its rectifier and lighting divisions out of Lynn.

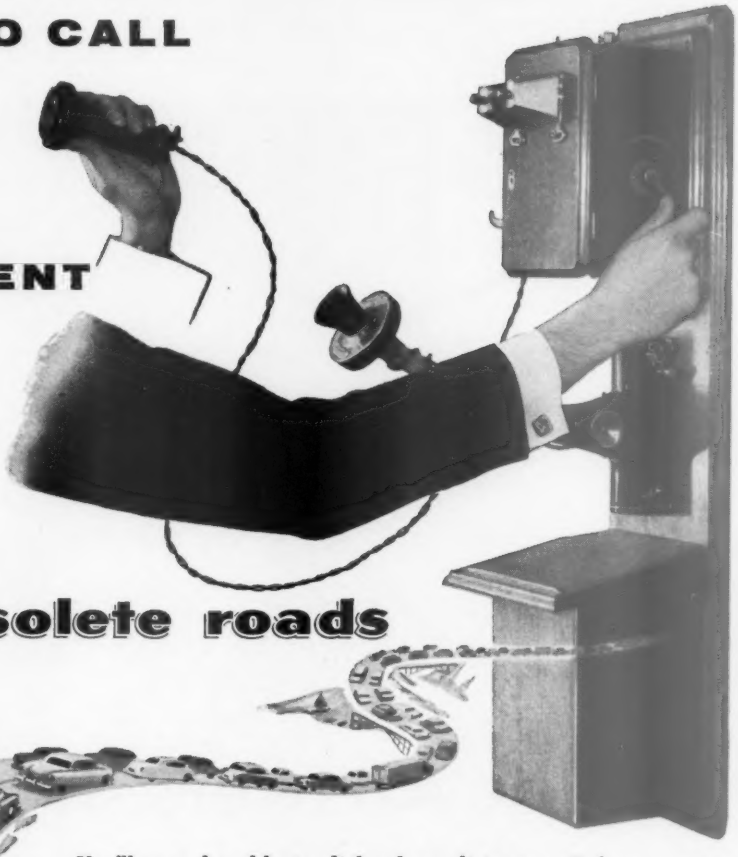
•

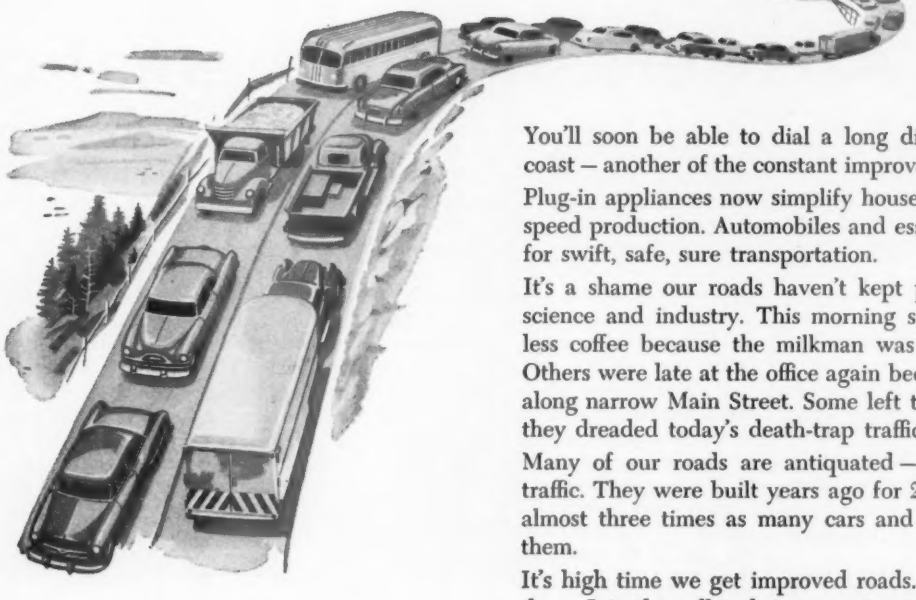
Self-generating forest: Union Bag & Paper Corp., New York, is carrying on a long-range project in Georgia to boost the yield of its timberlands. In time, it hopes to get twice as much lumber per acre. One fact is known already: When the best trees are removed, the forests are reseeded by cull trees—the small ones that aren't worth cutting.

•

Steel mill for New England: A small mill, more modest than recent rumors would have it, seems assured for Bridgeport, Conn. It is expected to cost $30-million, to begin operation in 1957.

IT'S TIME TO CALL FOR IMPROVEMENT of our obsolete roads





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Plug-in appliances now simplify household work. New machines speed production. Automobiles and essential trucks are designed for swift, safe, sure transportation.

It's a shame our roads haven't kept pace with the advance of science and industry. This morning some people drank creamless coffee because the milkman was caught in a traffic snarl. Others were late at the office again because the bus had to crawl along narrow Main Street. Some left their cars at home because they dreaded today's death-trap traffic.

Many of our roads are antiquated – cannot accommodate the traffic. They were built years ago for 20,000,000 vehicles. Today, almost three times as many cars and essential trucks must use them.

It's high time we get improved roads. Our taxes are paying for them. Join the call to bring our streets and highways up-to-date . . . "Good roads are everybody's business."

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This girl has less work than her neighbor. What else can she do?
If line has to speed up 10%, should this girl do more of the same or something different?
If you have to cut back, how can you double up the work?
If this component is simplified, which worker will have more idle time?
Are the five jobs performed by this girl more tiring than the seven performed by her neighbor?

For the Answers, Try Mathematics

Ever since 1776 when Eli Whitney began manufacturing muskets on an assembly line, American management has been trying to find ways to make his production-line technique more efficient. The latest twist is called assembly-line balance, and it is achieved by using a lot of high-power mathematics.

The balancing procedure was worked out by engineer M. E. Salveson at General Electric's Appliance Park in Louisville, Ky. The original study was made on a major appliance, and the thousands of computations that were made, are for use only on it. But the theory can be used, and has been, in balancing assembly lines for other appliances and probably can be extended to all commodities.

Salveson's preliminary results, now making the rounds in mathematical circles, will probably come in for a lot of rehashing at technical society meetings this winter. The math is strictly for the whizzes, preferably those with an electronic computer handy. But the assumptions and approach are straightforward.

If the theory catches management's fancy, it's conceivable that a flock of special consultants will spring up to perform the elaborate computations.

• **Human Failings**—The problem that Salveson it trying to solve mathematically is extremely difficult because the human factor is always present. In an assembly line, the conveyor moves along at a steady rate. Various parts and subassemblies are put together to form the finished product in a progression of steps. Workers along the line have to perform their jobs in a specific length of time so that they will be ready to start on the next item when the conveyor brings it along.

If all the operations required the same amount of skill and took exactly the same time to perform, the problem of line balance would be trivial. However, the operations vary tremendously. Each station in the line has to be assigned a combination of jobs so that the sum of the times required to carry them out is approximately the same as that of the dozens or hundreds of other stations along the line.

This is where the human element is strong. In computing the times, you have to take into account such things as walking time and worker fatigue. The speed with which an operator finishes his jobs determines the time cycle, or the time spacing, between products he can work on. If the jobs in one station can be finished more quickly than those in another, there's obviously some idle time in the first station.

• **Cost Problem**—This idle time becomes a serious cost problem, particularly when there's a change in production schedules. Take some simple examples. If you need to step up production on a particular line, how do you redistribute assembly operations over more people to get a faster time cycle and hence more production? In a period of recession, how do you redistribute the work to use fewer workers on a longer time cycle? If you redesign some of the components and change their assembly time, how do you readjust the time cycle?

Salveson's equations and charts, in seeking to find answers to these almost universal problems, put a great deal of emphasis on two practical considerations: precedence and mathematical discreetness.

Precedence. In assembling a product, there is usually some specified sequence, or if it's a large item a set of sequences, that provides a starting point in solving the problem. For example, you can't assign one station the job of tightening some nuts unless you've previously assigned the task of inserting the bolts to another station.

But there are a number of jobs for which sequence or precedence is not so critical. A name plate, for example, can be attached any time after the housing is put in place up to the time the

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Photo: *Cedarapids Bituminous Mixing Plant by Iowa Manufacturing Company.*

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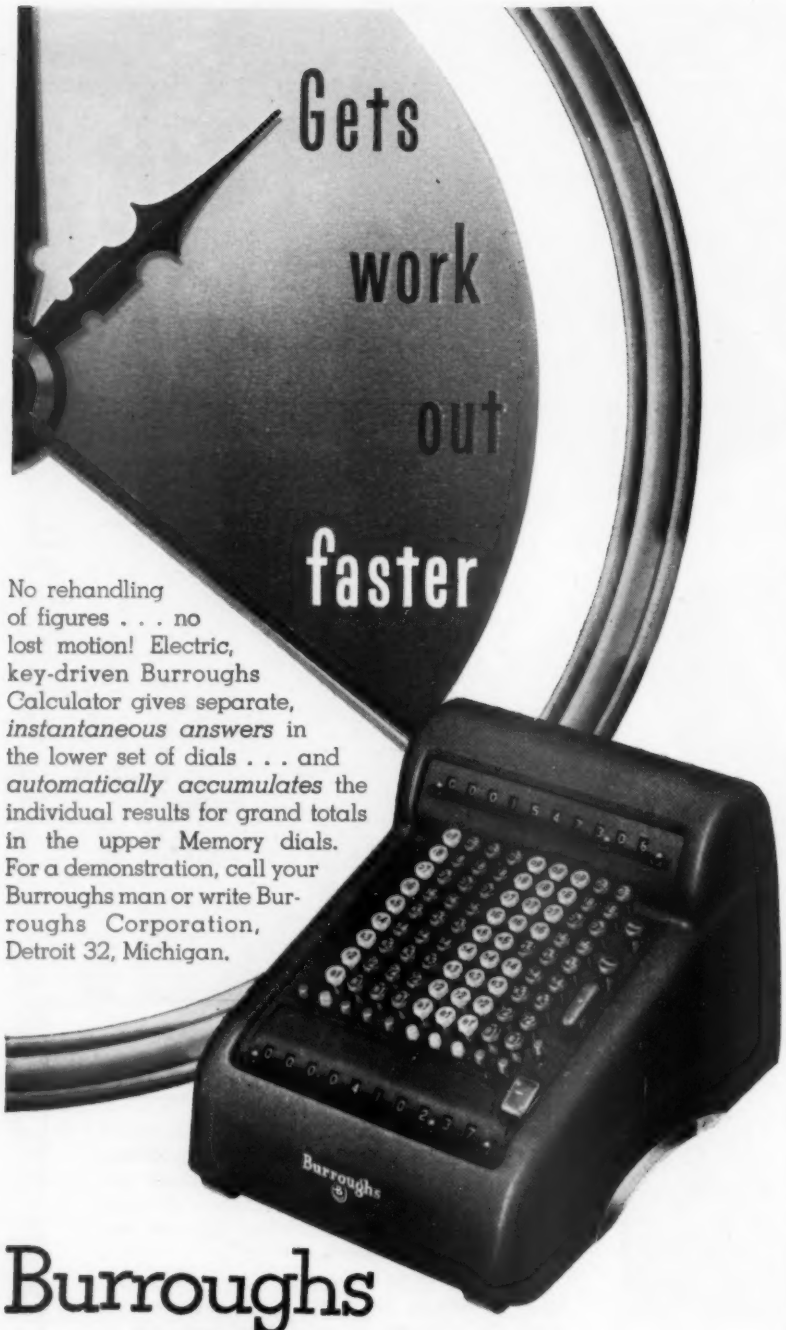
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finished product is ready for crating. A careful study of precedence may point up some bottlenecks in design that, if changed slightly, could speed up the time cycle.

Precedence also enters in where you have parts that can either be assembled at one station or at several. You have to consider, for example, whether a group of six bolts should be tightened by one station or several. At one station there would be less time required for picking up and putting down the tightening tool. But other factors might decide in favor of having several stations perform the process.

Discreteness. Very often there is a natural consecutive work relationship between some tasks, and they are performed most economically as an uninterrupted series. This is known as discreteness. Consider the following operation: (1) Pick up bolt; (2) pick up nut; (3) insert bolt in hole; (4) start nut on bolt; (5) pick up tightening tool; (6) tighten nut on bolt; (7) put aside tightening tool.

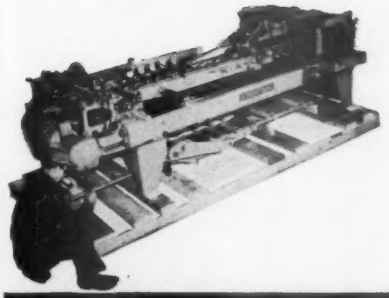
It's not practical for one man to pick up a bolt and for another to insert it. Similarly, if a man picks up a bolt he can probably pick up a nut at the same time. Larger assembly tasks often have technical requirements that make it uneconomical to divide them into short tasks arbitrarily spread over a number of stations. One of the basic time units to consider, therefore, is the minimum acceptable division of any manual task.

Salveson's equations and precedence graphs take these factors into consideration, and they have resulted in some very closely balanced assembly lines in Appliance Park. They have also focused attention on some related problems or, perhaps, spawned some of their own. That's why Salveson labels his work preliminary.

Since lines have been balanced to keep idle time to a minimum, the fabrication of subassemblies must be perfect. The assembly-line man has no time to "touch up" work that should have been done previously. This puts more emphasis on quality control of subassemblies.

The human element also remains a ticklish problem. Break-even points crop up everywhere. If you insure 100% achievement of tasks at every station even by slow workers, you may come up with a completely unrealistic time cycle. On the other hand, if you arbitrarily step up the time cycle, you may get an excessive number of partially completed products that have to be finished in repair stations.

Most of Salveson's work has been done manually. With computers he expects to work out optimum balances in advance so weeks can be cut off the lead time needed for line changes.



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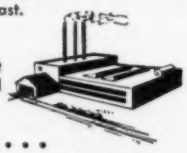

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NEW PRODUCTS

GM Tractor Goes in for Power...

...Harvester's for Versatility

These two tractors are showing off in public for the first time. The one at the top is built for power, the other for versatility.

The powerful tractor, called the Twin Crawler—went to work on Wednesday at General Motors' Milford Proving Ground, near Detroit. It is a product of the new Euclid Div., formed last year when Euclid Road Machinery Co. was merged into GM (BW—Aug. 15'53,p56). It marks the entry of Euclid-GM into the $400-million crawler tractor market.

The smaller tractor will be seen tomorrow in Atlantic City. It is a product of two companies: International Harvester Co., Chicago, and Drott Tractor Co., Milwaukee. The result is:

• A clamshell shovel (picture),

In all America...

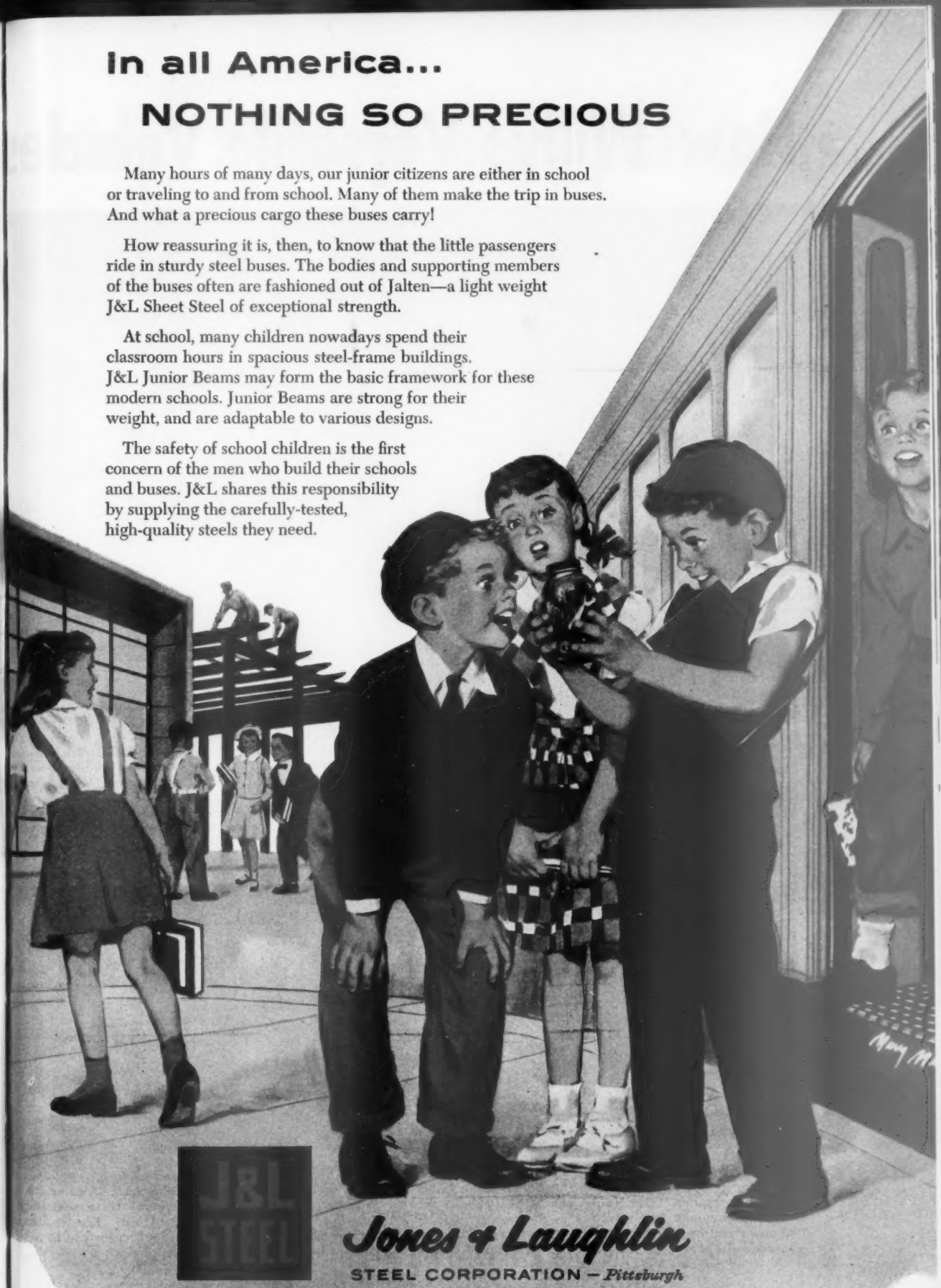
NOTHING SO PRECIOUS

Many hours of many days, our junior citizens are either in school or traveling to and from school. Many of them make the trip in buses. And what a precious cargo these buses carry!

How reassuring it is, then, to know that the little passengers ride in sturdy steel buses. The bodies and supporting members of the buses often are fashioned out of Jalten—a light weight J&L Sheet Steel of exceptional strength.

At school, many children nowadays spend their classroom hours in spacious steel-frame buildings. J&L Junior Beams may form the basic framework for these modern schools. Junior Beams are strong for their weight, and are adaptable to various designs.

The safety of school children is the first concern of the men who build their schools and buses. J&L shares this responsibility by supplying the carefully-tested, high-quality steels they need.



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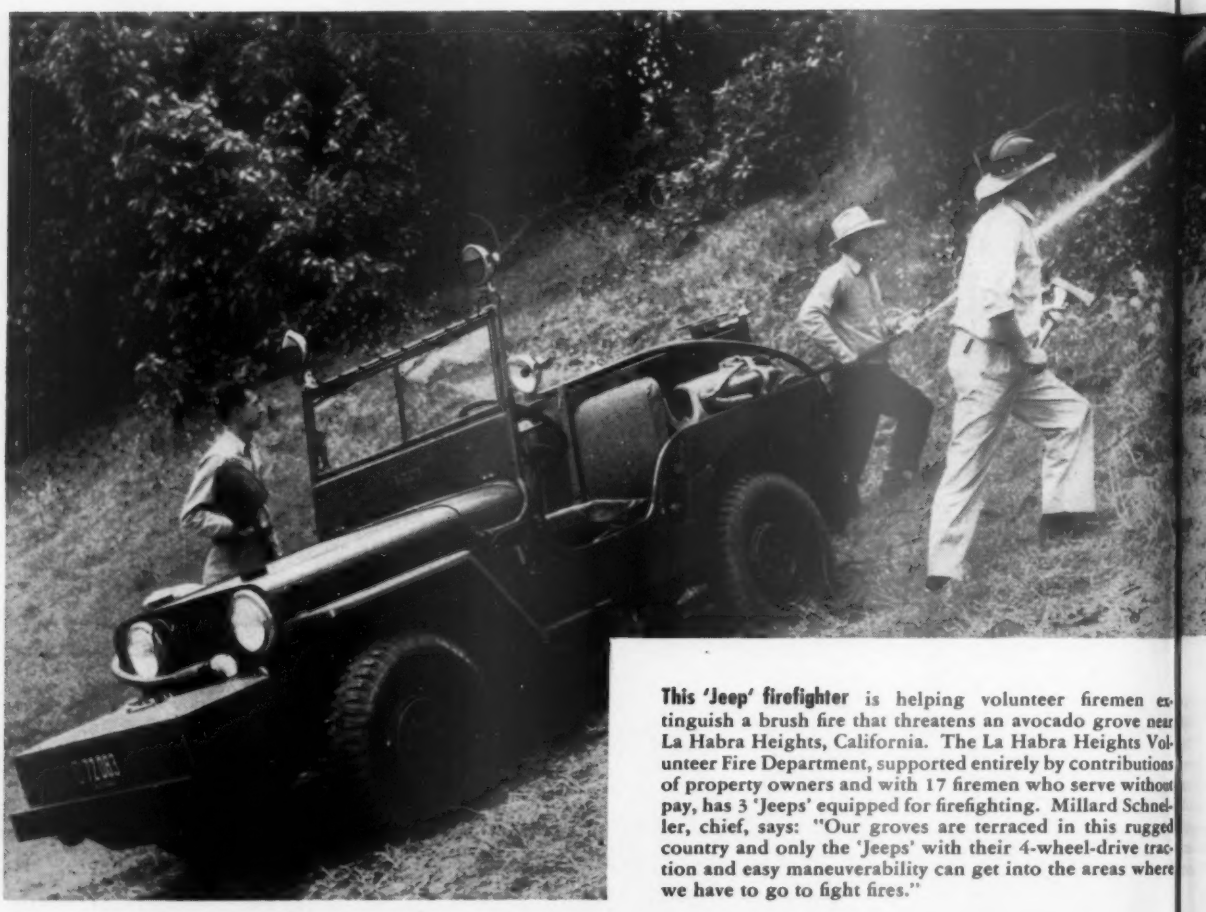
How Willys Versatile Vehicles



This 'Jeep' firefighter is helping volunteer firemen extinguish a brush fire that threatens an avocado grove near La Habra Heights, California. The La Habra Heights Volunteer Fire Department, supported entirely by contributions of property owners and with 17 firemen who serve without pay, has 3 'Jeeps' equipped for firefighting. Millard Schneller, chief, says: "Our groves are terraced in this rugged country and only the 'Jeeps' with their 4-wheel-drive traction and easy maneuverability can get into the areas where we have to go to fight fires."

A fleet of 10 'Jeeps' is used by Harder Extermination Service, Inc., Hempstead, Long Island, in its extensive insect control operations. "Our 'Jeeps' have helped make us the largest community fog operators in the world," says F. Kenneth Harder, president. "The 'Jeep' is ideal for our purpose. It goes anywhere, through woods and brush, through mud and over sandy beaches. In fact, it's the only small vehicle that can go where we have to go and at the same time provide the power we need. It's a most efficient vehicle and the upkeep is practically nil." Harder also has several other Willys vehicles in its fleet for use in termite control and general extermination work.

Help Your Management Cut Costs

The on-the-road and off-the-road stamina of Willys 4-wheel-drive vehicles fit them for the toughest jobs *anywhere.* They do everything from supplying mobile power to hauling cargo . . . from delivery service to transporting personnel—all with savings of hours whenever time is important.

Indeed, the records show Willys utility vehicles, with their "go-anywhere" ability, get to the job and get the job done when other vehicles are tried and found wanting.

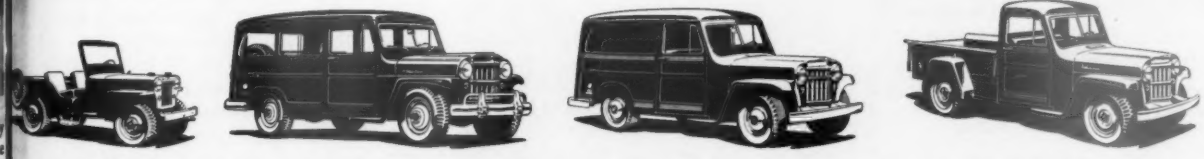
Regardless of what your business is, Willys utility vehicles can contribute to its efficiency and help cut operating costs. Investigate the advantages of these versatile vehicles now.

Kaiser-Willys Sales Division,
Willys Motors, Inc.,
Toledo 1, Ohio.

Ray B. Bloker, director of special promotions for Trans World Airlines is a part-time rancher who spends his weekends developing his 33-acre ranch located in the foothills above Glendora, California. "I couldn't ranch without my 'Jeep'," says Mr. Bloker. "Its versatility and many practical uses allow me to maintain my 33 acres of citrus and avocados at a minimum operational cost." Pictured above is Mr. Bloker in one of his 'Jeeps' (he owns two) as he operates a hydraulically-controlled combination cultivator and scraper in his lemon grove.

Deep underground, this 'Jeep' is one of 9 used for hauling bauxite, the mineral from which aluminum is produced, in the mine of Dulin Bauxite Company, Sweet Home, Arkansas, operator of the largest independent bauxite mine in the state. Phil Dulin, president says: "The 'Jeeps' give us a more efficient way for hauling, and they definitely cut operating costs. If ever a vehicle was put to a test . . . it's a 'Jeep' underground." Dulin also uses a Universal 'Jeep' and a 4-Wheel-Drive Willys Truck in its open-pit mining operations.

Eutectic Welding Alloys Corporation, Flushing, New York, use this Willys Station Wagon to help speed deliveries of its products to customers throughout the world. Rene D. Wasserman, president of Eutectic, says: "We use the Willys for quick trips to nearby airports for deliveries of welding rods and other small items. It helps us fill emergency orders quickly, and thus saves money for our customers as well as for ourselves." The Willys is also used to carry visitors and company personnel between the airports and the plant.



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that reaches down and picks up a load of loose material, then carries it off and dumps it.

- A bulldozer.
- A combination clamshell-bulldozer that pushes through earth like a bulldozer, then clamps shut and lifts.
- A skid shovel that scoops up loose material—much as a front-end loader does.

To convert the unit from one operation to another, the operator flips a shovel-selector lever in the cab. He can make the switch whether the tractor is in motion or standing still.

For both companies, these new products represent further expansion in the earth-moving field. GM's began with the Euclid merger; Harvester's, when it bought out Frank G. Hough Co., late in 1952 (BW—Nov.1'52,p33).

• **Separate Ways**—But each is headed in its own direction. GM is going toward the massive earth-moving jobs such as highway construction and open pit mining. Its TC-12 Twin Crawler weighs about 60,000 lb., has two diesel engines with a total horsepower of 380.

The TC-12 fills out the Euclid-GM line of earth-moving equipment, which was still incomplete after the merger.

Harvester is going after small excavation jobs: A city, for example, might use it to convert wasteland through the landfill method of garbage disposal. Its horsepower with a Harvester TD-6 crawler is 34—or 41 hp. if you use a larger, TD-9. Its weight: 9,000 lb. to 12,000 lb.

• **Flexibility**—GM says the Twin Crawler has twice the horsepower of tractors now in production. It has a fast, flexible steering system, which increases its workability. It can be steered by increasing or decreasing the speed of one engine for gradual, even change in direction; it can be steered by putting one engine's transmission in neutral and applying a track brake; or rapid, sharp turns under full power can be made by putting one transmission in forward and the other in reverse.

By building the tractor in two units, GM says it gains in a couple of ways. First, it can be separated for shipment where weight and width restrictions are encountered. (The TC-12 measures 11 ft. across.) Second, the tracks maintain better traction, because each half of the tractor maintains better ground contact in rough terrain.

• **Big Market**—Drott will turn out the four-in-one units for Harvester in its Milwaukee plant. GM says that the Euclid Div. is taking over the Cleveland plant of GM's Electro-Motive Div. to produce the new TC-12. That indicates that the company has its eye on a big market, because the plant contains 480,000 sq. ft., more than the total area of the three plants Euclid operates now.

Auto Thermometer

Taylor Instrument Co. has come out with an auto-window thermometer (above) to tip you off to hazardous driving conditions and possible radiator freezeups. The company thinks it is the first such thermometer on the market.

The company says you can attach the thermometer yourself. It is made of Tenite plastic.

Cost: $1.19.

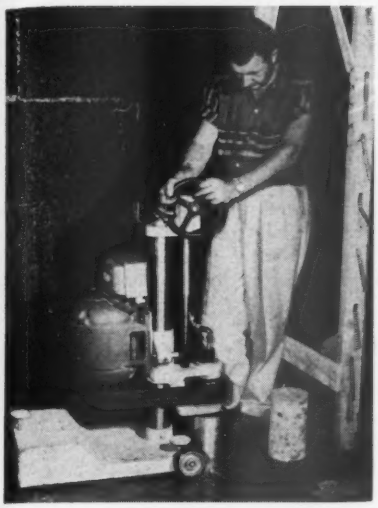
• *Source: Taylor Instrument Companies, 95 Ames St., Rochester, N. Y.*

Aircraft Sealer

The new sealant gun above is being used by Douglas Aircraft Co. for close-quarter work on aircraft assembly operations. Douglas got together with Semco Research Inc. to develop it. Semco will handle manufacture and distribution.

The gun weighs less than 17 oz., holds about one-third more sealing compound than equipment that weighs twice that much. It can be used with such industrial caulking compounds as automotive, marine, and electrical sealants.

• *Source: Semco Research Inc., 212 W. Florence Ave., Inglewood, Calif.*

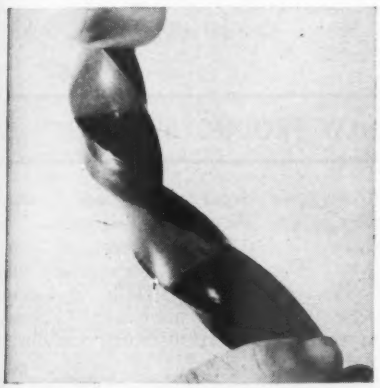


For Holes in Concrete

This drilling machine can cut a hole 6-in. in diameter through a foot of concrete in less than 2 min. Molco Drilling Machines, Inc. says it's the only such machine that can cut through hard aggregate and steel reinforcing bars without loss of drilling speed.

It drills holes ½-in. to 6-in. in diam., 18-in. deep, in one operation. Price: 1-hp. model: $385; 2-hp.: $485.

• *Source: Molco Drilling Machines, Inc., 1100 20th St., N.W., Washington, D. C.*



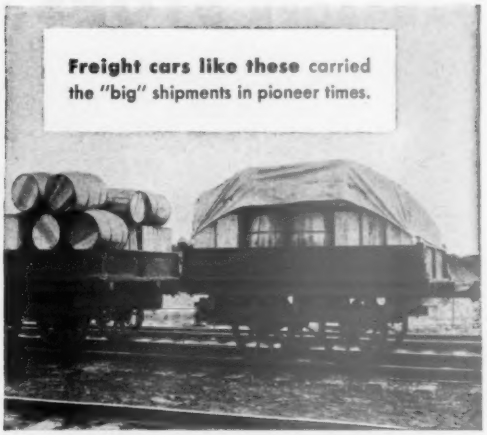
Toughened-Up Rubber

This twisted piece of organic rubber has been coated with a new silicone gum that increases its tensile strength and weather resistance, and helps it to stand up under temperatures that range from as low as −70F to as high as 400F.

The gum has been developed by the Dow Corning Corp. The company calls it Dow Corning 410, says it is now available for shipment in commercial quantities.

It can be blended with organic rubber, or applied as a protective coating. The company says that when blended

Railroads have always delivered the goods



Freight cars like these carried the "big" shipments in pioneer times.

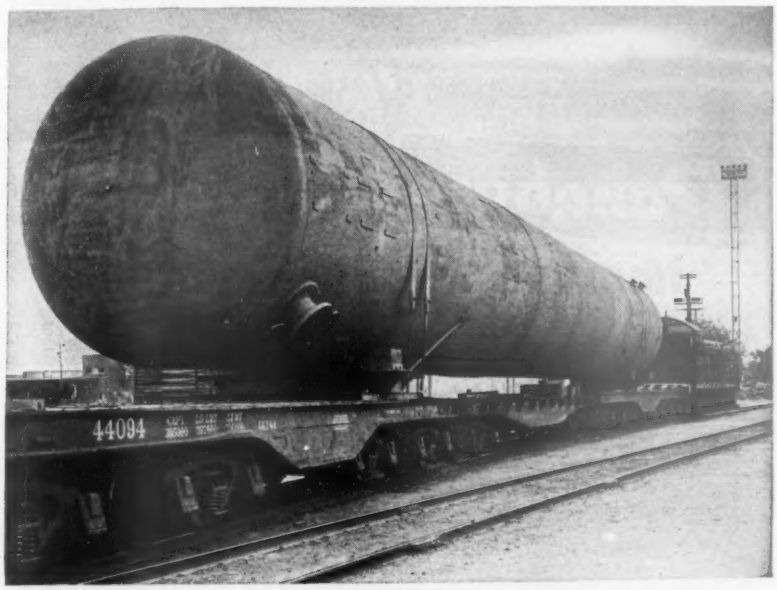
...AND THEY'RE DOING THE JOB BETTER ALL THE TIME

From earliest days the railroads have handled the big, tough jobs. As America pushed back its frontiers, the railroads were there. They moved crops to market, hauled more and more raw materials to more and more manufacturing centers, carried an ever-widening range of finished products to more and more consumers. They helped the nation grow and thrive — and, today, they furnish the low-cost, efficient, all-round transportation without which you could not live as you do.

This has been achieved by the railroads — in the best American tradition — by their own efforts and with their own money. Just since World War II, they have spent more than 9 billion dollars for new locomotives and cars, for new signals and better terminals, for all manner of improvements in plant and facilities.

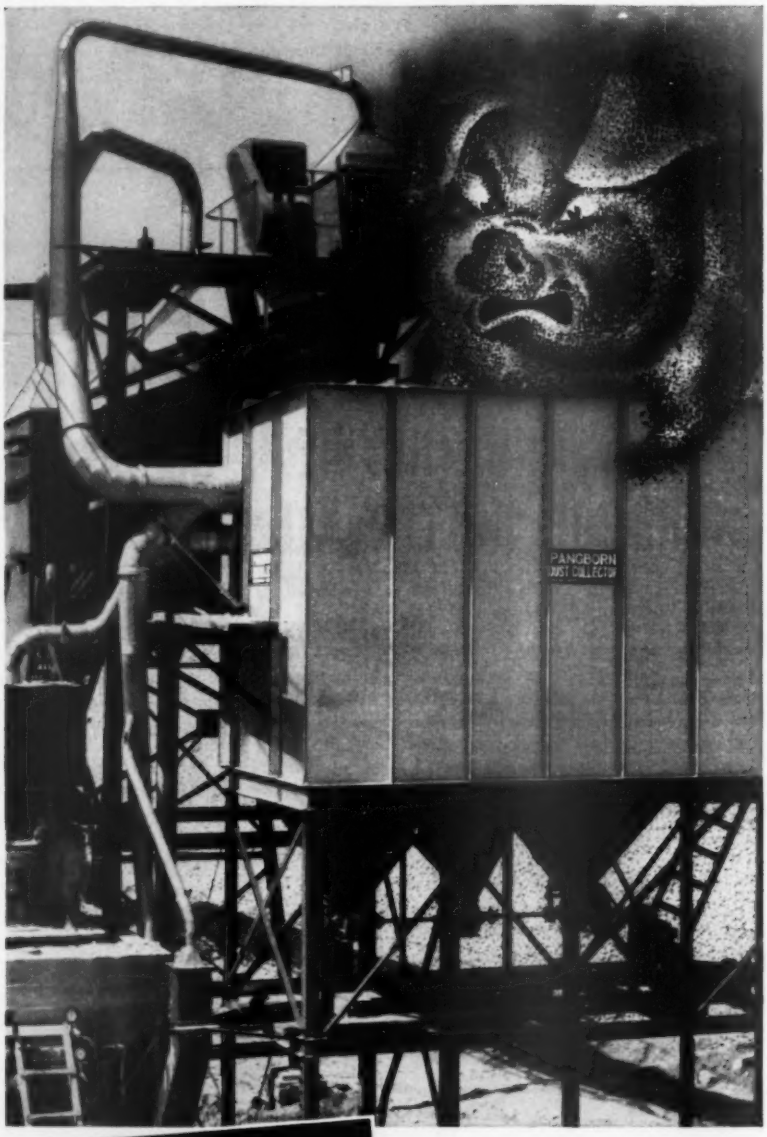
It is this kind of investment — and the faith in the future from which it springs — that enables the railroads to keep abreast of their job of hauling more goods more miles than all other forms of transportation put together, and to do it at a lower average charge than any other form of general transportation.

Spanning three modern flat cars, this 340,000-pound oil tank traveled 1,000 miles from the manufacturing plant to the refinery site.



ASSOCIATION OF AMERICAN RAILROADS
WASHINGTON 6, D. C.

PANGBORN **STOPS** THE DUST HOG



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for the H. E. Fletcher Co., West Chelmsford, Mass.—by making possible the marketing of cleaner granite products. In addition, Pangborn Dust Collectors guard employees' health from dangerous dust, protect costly machinery, and permit the salvage of valuable material for resale.

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Pangborn engineers will be glad to discuss *your* dust control needs—show you how Pangborn equipment can save you time, trouble, and money. For more information, send for Bulletin 909-A today! Write to: PANGBORN CORPORATION, 4200 Pangborn Blvd., Hagerstown, Maryland.

with oil-resistant rubber the gum increases the rubber's stability after the oil gets very hot.

• Source: *Dow Corning Corp., Midland, Mich.*

New Transformers

A radical new design in power transformers was announced last week by General Electric Co.'s Power Transformer Dept. The company says it represents the most extensive changes in transformer design in more than 50 years.

GE says the new development is the first application of gaseous insulation to high voltage power transformers. The gas is sulfur hexafluoride, a heavier-than-air gas developed only a few years ago.

• **Advantages**—By using the new idea, GE thinks it will be able to produce big power transformers that are lighter, quieter, and safer than those used in power plants today.

Two of the new designs are now on GE's drawing boards. When they're completed, they will be field tested by Consolidated Edison Co. of New York, which is jointly working with GE in transformer development.

• **Rating**—Present day power plant transformers use liquid insulation. One drawback here is that such a transformer is limited to ratings of 46,000 volts. With gas, that rating can go up. The two transformers being built now will be rated at 69,000 volts.

• Source: *General Electric Co., Schenectady, N. Y.*

NEW PRODUCTS BRIEFS

A fireproof door with wood veneer facings was announced this week by United States Plywood Corp., of New York. The door has been tested in temperatures up to 1,700F, and has been approved by Underwriters' Laboratories, Inc. for vertical shafts, corridors, and room partitions.

•

Stingless iodine, with the same germicidal properties as ordinary iodine, has been developed by West Disinfecting Co., Long Island City, N. Y.

•

A fresh idea in hobby kits will be shown in department stores for the first time next week. Each of five different kits contains a book describing one science, such as radio or weather forecasting, plus enough equipment to build a radio set, telescope, or weather station. Behind the idea are such companies as RCA, American Optical Co., Gemological Institute of America, and the Museum of Science and Industry.

Are your plastic ideas THIS big?

When it comes to large-size plastics moldings, industry can take a cue from housewares. This cake cover (diameter 12 in., height 5½ in.) is an example—big, lightweight, glossy-surfaced, crystal-clear. If you redesign or update your product, you may be interested in the material from which it's molded.

BAKELITE *General-Purpose* Styrene Plastic SMD-3500 offers many advantages for these large-size moldings. Although cycles are fast, pieces are remarkably free from stress crazing and weld lines. Molders like the fact that it can be molded on fast cycles on all types of injection machines. Its high plasticity helps speed production.

Bakelite Company uses specially-designed, automatic manufacturing equipment to produce SMD-3500. An advanced quality-control system is constantly in effect. The same Bakelite Company technical resources that developed SMD-3500 and many other important plastic molding materials are at your service in applying them to your product. Write Dept. YS-61, describing your problem.

Cake cover molded of BAKELITE Styrene Plastic SMD-3500 by **Columbus Plastic Products Inc.**, Columbus, Ohio.

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STYRENE PLASTICS

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A Division of
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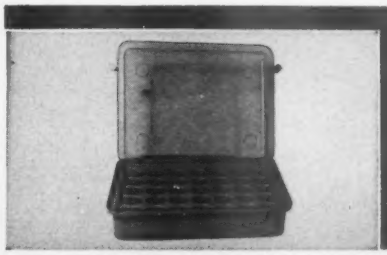
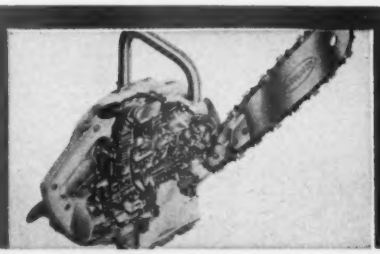


DEEP-DRAWN LID on this tote box is made of tough, transparent BAKELITE Rigid Vinyl Sheet. Equipped with this durable, new lid, boxes outlast those previously used 10 to 11 Box by Product Engineering Laboratories Co., Inc., Newark 5, N. J.

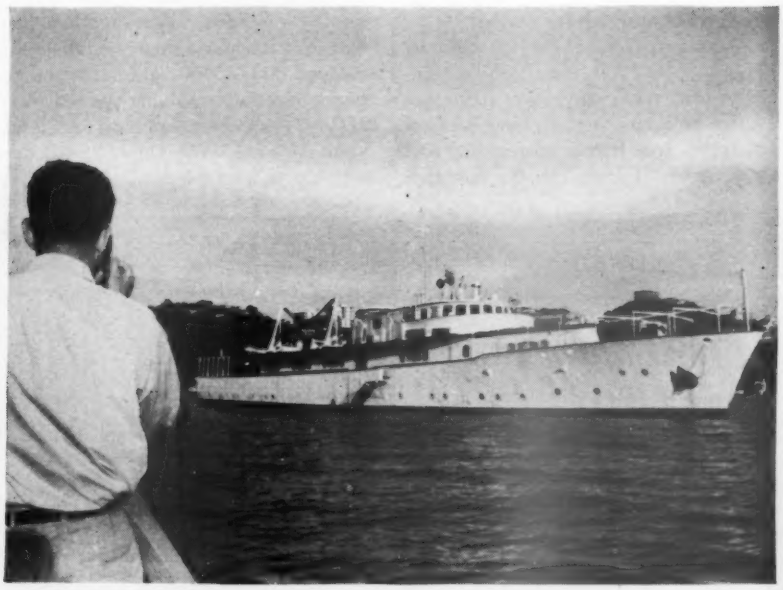


PLASTIC HEART makes this chain saw easy to start in any weather. Liquid BAKELITE Epoxy Resin poured around its coil and magneto forms solid block of plastic . . . permanently seals out moisture, dirt. Made by McCulloch Motors Corp., Los Angeles 45, Calif.

"MICROBALLOON" SPHERES, shown being fed to oil storage tank, are made of BAKELITE Phenolic Resins. Tiny, hollow spheres float on oil's surface, form blanket that cuts evaporation 80-90 per cent! "Microballoon" is a trade-mark of The Standard Oil Co. (Ohio).

An ex-salesman turned promoter, Makris (left) has been said to look on money-making the way Cortez looked on conquering the Indians. No administrator—he often leaves his office dangling for days—his forte is ideas and the ways to convert them to cash.

Young Mr. Makris: $2-Million



YACHT, owned by President of Mexico, caught Makris' eye. He's trying to buy it for use by private Houston club he wants to form.

"BOY WONDER" of Houston, Mike Makris is spectacular in a way the get-rich-quick Southwest is getting used to. At age 27, Makris, a Mexican citizen of Greek parents, has piled up holdings—ranging from shrimp boats to sulfur—that he figures at $2-million.

PHONE means constant involvement in deals. In Acapulco, he dickers for hotel.

AT AIRPORT, he tells hotel owner, "price still sounds on the high side to me."

AT BEACH, he stops to call man who wants to interest him in uranium deal.

ls Just the Beginning

(Story continues on page 66)

PRIVATE PLANE carries Makris over some of the 100,000 mi. he travels each year. Plane is new toy for Makris; now he wants to fly it.

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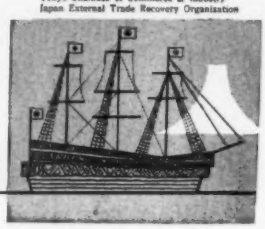

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A Young Man's Fancy—Money

(Story starts on p. 64)

A couple of weeks ago, Michael Angel Socrates Makris, of Houston, celebrated his 27th birthday. The festivities were somewhat curtailed, however, because Makris was pretty well tied up. He had just returned from a business trip to Mexico City and Acapulco, and was busy trying to nail down three deals he had worked on there.

One deal involved the President of Mexico's yacht, which Makris was trying to buy. A second was for the purchase of a hotel in Acapulco. The third also concerned the purchase of a hotel, this one in Mexico City.

Along with these, Makris had a lot of other pots boiling on Sept. 3. As chairman of Texas International Sulphur Co., he checked reports on the progress of sulfur explorations going on in the Isthmus of Tehuantepec, Mexico. As chairman of Pan American Uranium Corp., he checked up on uranium explorations under way in Utah. As president of International Fisheries, Inc., he checked on the operations of a fleet of shrimp boats in the Gulf of Mexico.

Between times Makris made policy decisions for some of the 20 other companies he controls or helped finance. These range from fish canneries to sawmills, brick factories to parking lots, a loan company, credit union bank, and a miniature golf course. He also mulled over a plan he has for a racetrack.

Makris estimates his present holdings at close to $2-million—much of it on paper—and he plans to buckle down to work on his next million this year. Considering that Makris was earning only $20 a week eight years ago, even Houston—where Makris lives and makes his business headquarters—feels that he has come a long way, fast.

I. Promoter Supreme

It's probably fitting that Makris does live in Houston, for that city is one of the few in the world that offers young men the opportunity to become millionaires in a hop, skip, and a jump. Today, there are about three dozen young men in Houston who, starting from scratch, have reached the millionaire mark before reaching the age of 30.

Makris, of course, is rather spectacular even in Houston. One reason is that, while most of Houston's young millionaires made their money in oil or gas, "Fabulous Mike" has made his in everything else but. Another difference is that Makris moves in a much wider business world than do most of his Houston contemporaries. Many of his deals have an international flavor; he is just as much at home in Mexico City as he is in Houston or New York. In fact, most of his companies are located south of the border.

• **A Natural**—By profession, Makris is a promoter. While this word often carries some undesirable connotations elsewhere, in Houston it's a highly reputable profession. According to Makris, the job of a promoter is to find or figure out new ideas and services, then match them up with people who have capital to invest. For his services, Makris usually likes to get part of the ownership; if the deal sounds good, he is likely to invest some of his own money.

So far, Makris has done very well. A person can run out of breath trying to rattle off all his titles and holdings. In addition to his sulfur, uranium, and fishing interests, he is vice-president of the Center Development Co., which is building a 190-unit housing development in Deer Park, near Houston; president of the Banco Hipoyecario in Reynosa, Mexico; and president of American Argo, S. A., an import-export firm in Mexico City.

• **Assets**—While most of Makris' success has been self-made, he has several assets that many other young men in business don't have.

First, he has an instinctive gift for business, inherited from his father, Spyros Makris, once Greek consul in Mexico, and a prosperous businessman in his own right.

Second, Makris has the advantage of being a citizen of Mexico while operating from Houston.

Third, Makris understands the business natures of both Latins and Anglo-Saxons. He speaks four languages—English, Spanish, Greek, and French—and has traveled extensively in the Western Hemisphere.

Makris has never had any formal business education. But in down-to-earth experience, he has been a businessman ever since he reached his teens.

During his grammar school years in Mexico City, Makris skipped class to accompany his father on trips to South America and the U.S. At 15, he was making money selling Alpine equipment to a high school hiking club. At the same time, his father was operating a furniture factory in Mexico, and young Makris became representative for a German-made lock his father was using. Makris did so well that his father cut in on the deal.

• **Salesman**—After receiving a B.A. degree from the National Polytechnic Institute in Mexico in 1945, Makris entered Texas A&M. By the end of the first year it was obvious that his talent for making money far outstripped his

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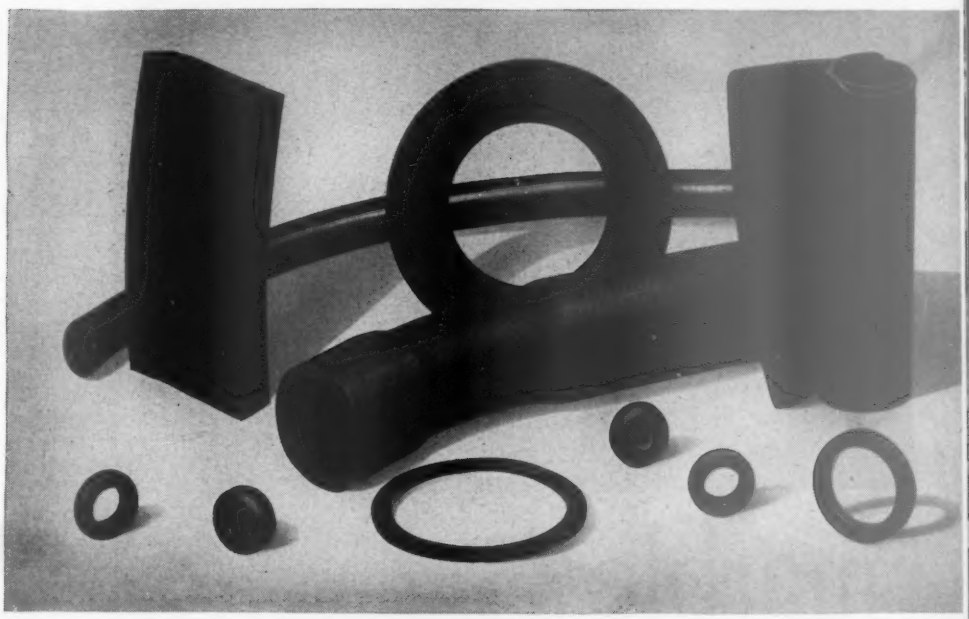

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inclinations for any more education. He dropped out of college and moved to Houston, where he married Stella Kriticos. He also took a job managing one of his father-in-law's restaurants at $20 a week.

To supplement his income, Makris worked evenings selling baby strollers. On weekends, he sold real estate in Bellaire, near Houston. In July, 1949, he landed a spot with Western Auto stores—a doorbell-ringing job selling such appliances as refrigerators, stoves, washing machines. He soon was making between $500 and $600 a month.

• **Importer**—While working here, Makris got interested in the import-export business. His father had a friend operating in Mexico City, and Makris kept hearing of deals he might work into. So for several months, he sold appliances in the morning and dictated letters in his export-import office in the afternoon.

Shortly afterward, he decided that his salesmanship abilities could be used in a more lush field—namely, investment. "It takes as much salesmanship to sell a pencil as to sell a few thousand dollars worth of stock," says Makris. "Yet in stocks, the opportunity for profit is so much greater."

He talked the manager of the Houston office of the brokerage firm of Harris, Upham & Co. into giving him a job. After completing a correspondence course in finance, he began selling securities as a customer's man.

II. Into the Big Time

While at Harris, Upham, Makris began toying around with an idea that had intrigued him for two years. In 1949, his import-export firm was circularized by a European concern interested in purchasing 10,000 tons of sulfur. Makris found that it was virtually impossible to fill the order. He began checking around. Why was sulfur so hard to get? How could it be produced? And where could it be found?

In his hunt, Makris learned of the sulfur findings of the Pan American Sulphur Co. in Tehuantepec, Mexico. Apparently the sulfur was there. The problem was how to get it out. The first step, Makris figured, was to get a concession from the Mexican government to explore the Tehuantepec Isthmus area. But it cost $75,000 to do the preliminary work before he finally wound up with the concession. Most of the money he borrowed from friends and customers.

• **Groundwork**—In 1952 with the sulfur deal still hanging fire, Makris and Tom A. Kramer, a 27-year-old co-worker at Harris, Upham, quit to form their own brokerage company, Kramer, Makris & Co.

Makris says that although he was hard up for money at the time, he

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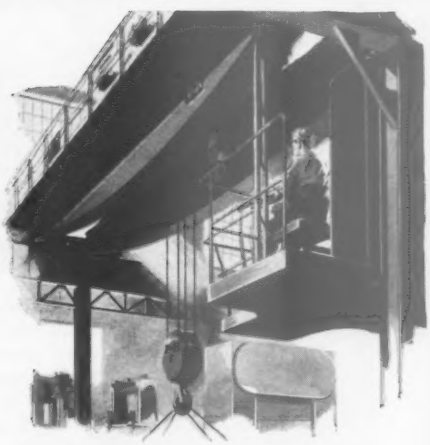

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figured that working for Harris, Upham and flying to Mexico on weekends to do his own business was neither cheap nor practical. With his own firm, he would have more time to spend negotiating for the concessions.

Under the new setup, Makris was to be the idea man, Kramer the administrator. Each put up $500 and started off in a tiny office without a secretary. From the start, Kramer did the great bulk of the work in the brokerage and still does today.

Some time after the brokerage was set up and going the partners organized the Providential Investment Corp., and sold $250,000 worth of stock to friends and customers. The idea behind Providential was to form a financial center where situations could be presented and where capital could meet with experienced personnel to develop new ventures.

Providential helped finance Makris' effort to secure sulfur properties in Mexico. While he was still dickering for the Tehuantepec concession, Makris and some Mexican friends leased in early 1953 the Navarro Concessions in the State of Baja California, Mexico, 23 miles south of San Felipe. The idea was to set up a small plant and produce sulfur from the surface outcroppings of sulfur in the area.

• **Financing**—In February, 1953, Makris organized Texas International Sulphur Co. to finance this operation. A public offering of 400,000 shares of 10¢ par value common stock in TIS was made at $1 a share. The stock was sold out within a matter of hours. For its $400,000, the public got 34.8% of the common stock in the company.

The promoters of the company held 750,000 shares (65.2%), which they obtained at approximately 15¢ a share. Providential emerged the big holder of TIS stock. It was able to purchase 450,000 shares for $55,000 and services. It later bought 50,000 additional shares for $35,000. The Compania de Inversiones Generales, S. A., of which Makris, Kramer, and Spyros Makris were officers, acquired 210,000 shares for securing the Navarro concessions.

• **The Deal**—Makris himself wound up owning a big hunk of stock, and for all purposes and intents, control of the company. A few months after the company was formed, TIS stock had run up to 4¼. Today, the stock is selling at 1¾-2¼, bid and ask.

One reason for the stock price rise was the fact that TIS wound up with a concession to explore for sulfur in 123,550 acres in Tehuantepec, which was the area Makris had eyed in the first place. It also got a "floating concession"—good for only the next few months—to prospect on seven other tracts on the isthmus.

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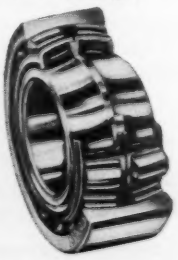

the Mexican government a dime for the concession. If sulfur is produced, however, Mexico will get a 10% royalty on all production.

III. The Conqueror

In appearance, Makris is a slender, sallow-complexioned six-footer. There's nothing at all unusual about his appearance. As one of his friends once said, "He has the type of face you can quickly forget."

However, he has the reputation of being a charming conversationalist. He speaks with a heavy accent, a mixture of Mexican and Greek that most people find very pleasant. Makris himself is quite sensitive about his accent, and rarely likes to talk to large groups. In dress, he tends to the informal side—usually arrives at his office carrying his coat and with his tie loose. In a place like Acapulco, he often conducts business clad only in bathing trunks and T-shirt.

Makris goes to work around 8 a.m., stays until 6 or 7. After dinner, he tries to call people he couldn't reach during the day. If he isn't at home, he usually can be found in some of Houston's top business clubs—such as the Houston Club, Cork Club, or Petroleum Club. Sundays he tries to reserve for his wife and two children.

• **Disciple**—Makris regards money-making as a tremendous and exciting challenge. His drive in this direction is obvious. On his desk sits a small stone object, the Goddess of Wealth in the Mayan culture. A photograph of this image adorns Texas International stock certificates. It sums up at once the reason for Makris' constant drive.

• **Discounters**—It's only natural that someone who operates like Makris is bound to have enemies—and Makris has his share. Many Houston investment people, for example, pooh-pooh the worth of both Providential and TIS. They feel that investors in these companies got the short end, that Makris and his associates got too large a share of the money invested.

Whether this is true or not is hard to determine. At any rate, Makris has had some legal problems with TIS. Last winter, he was sued for $400,000 in breach of contract suit filed by a group of Houston oilmen. The suit involved his Mexican sulfur deal, and was settled out of court.

Others say that Makris' success isn't really a rags-to-riches story, but that much of his success is due to his father's helping hand.

Makris also has the annoying habit of using his foreign languages to his own advantage. "He will or won't understand a deal until it starts going his way," is how one disgruntled Houston businessman puts it.

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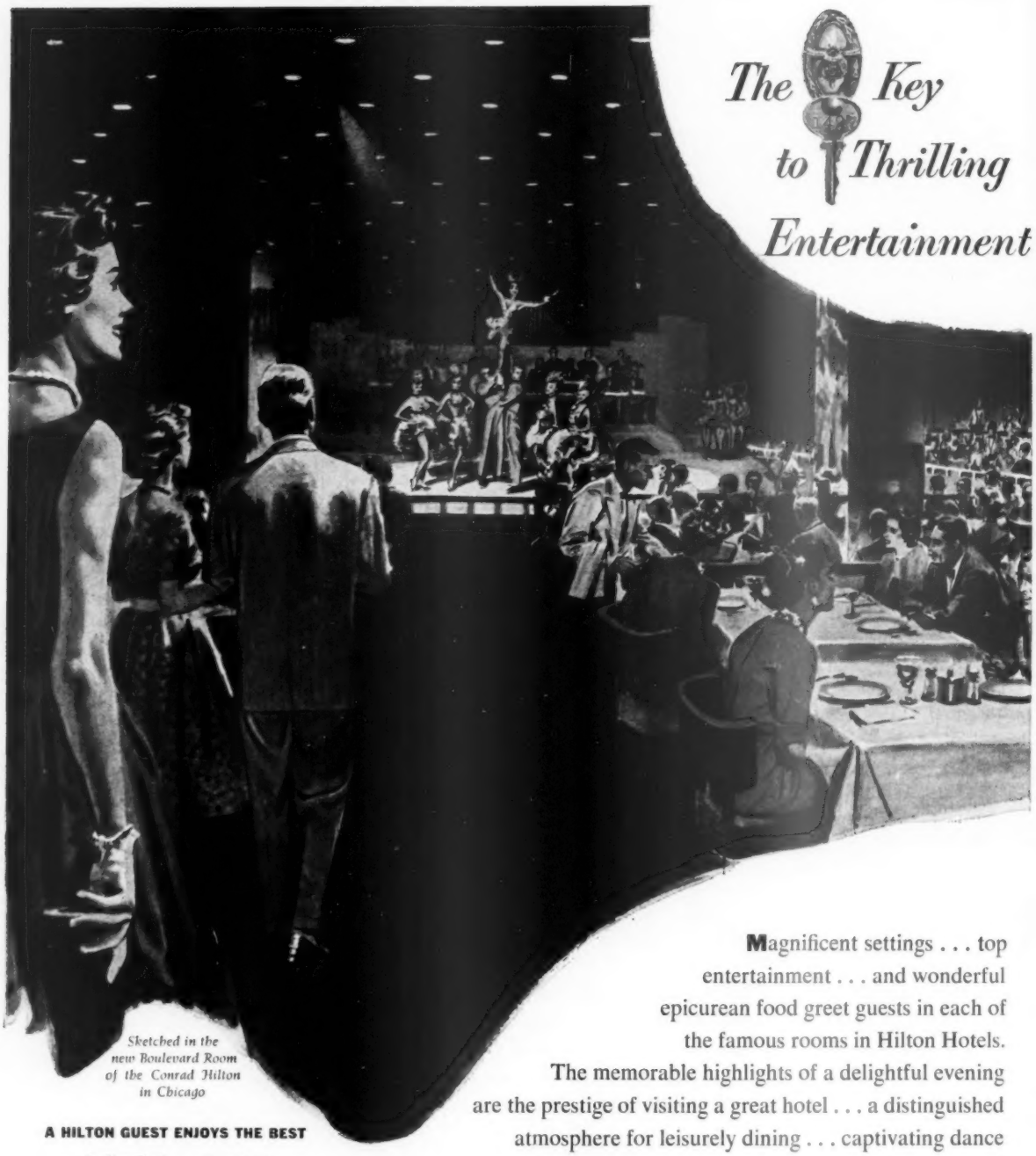

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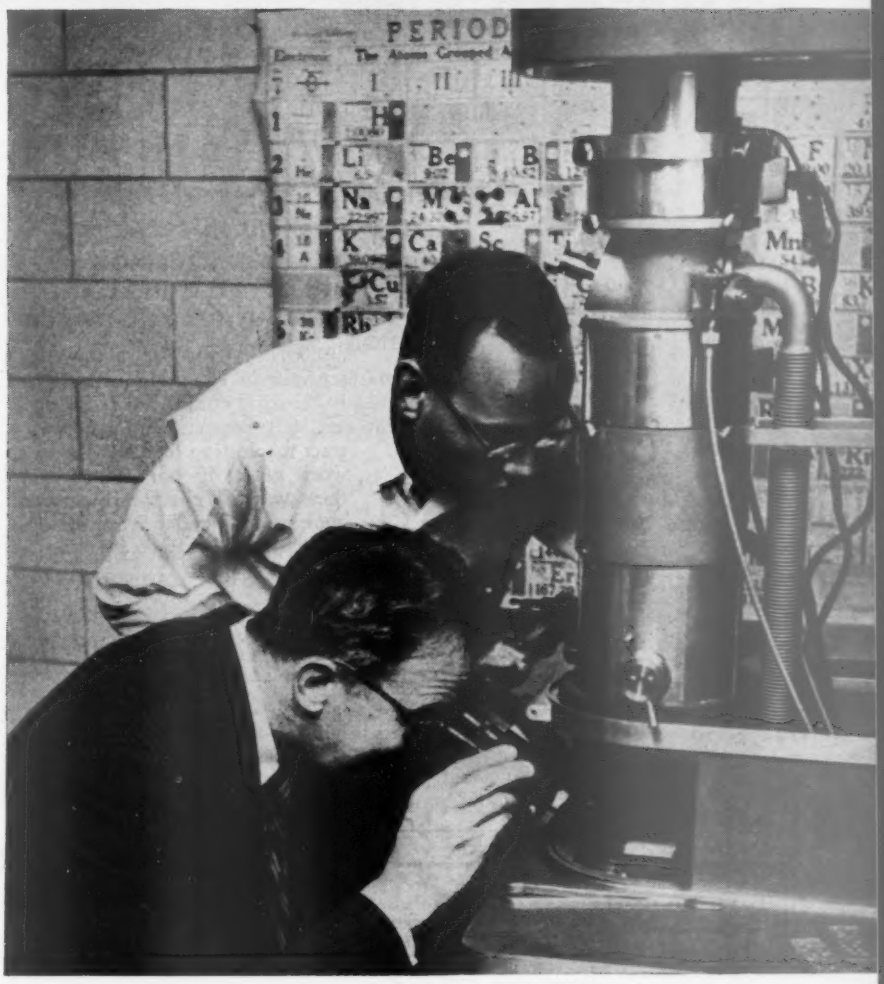

Massive new instruments, such as Princeton's electron microscope (right), are developed to answer research questions—and in turn open up new fields for research. The new fields in their turn demand new instruments. That's the race that has made this . . .

The Age of Instruments

In 1924 a French scientist theorized that a moving body—an atom or molecule—would have a special wavelength. An odd and abstract theory.

Decades later the theory produced the electron microscope. An ordinary microscope has a limit on how small an object it can see: The object has to be bigger than the wavelength of the light it's being seen by. Lots of interesting things are smaller than the wavelength of visible light. But the wavelength associated with fast-moving electron is very short indeed. So, the electron microscope bounces an electron beam, instead of light, off the tiniest bits of matter. In effect, it allows scientists to "see" these tiny bits of matter.

The electron microscope in its turn opened new fields of theory—a whole world of questions as to what goes on within an atom. To answer these questions, scientists are developing not one but batteries of new instruments.

This is one example of the race between theory and instruments. In the last 100 years, science has advanced in giant and ever-faster steps—and each new step brings new and more complex and more expensive instruments. Scientific advance is snowballing—and so are the instruments.

• **On Parade**—This week the scientists are making their bow to the instrument at the opening of the First International Instrument Congress & Exposition in the Commercial Museum and Convention Hall, Philadelphia. By closing time, Sept. 24, some 500 researchers from all over the world will have checked themselves out on the new instruments. They are there for only one reason: They need the massive instruments to advance their frontiers in research.

That's why the exposition marks a coming of age for the industry. Another mark is the growing array of research tools. The last two weeks alone have seen two major new instruments announced:

• An X-ray microscope, developed by General Electric Co., that pictures the inner details of matter on a greatly enlarged scale.

• A millimeter wave generator, developed by Stanford University, that uses wavelengths between microwaves and infrared rays (a relatively unknown region until now) for scientific studies of the atom.

The advance is so rapid that many of today's standard laboratory instruments were unknown when the researchers who use them were going through college. The electron microscope is one. Others include the mass spectrometer, which permits detailed

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". . . the new instruments supplement older research tools . . ."

INSTRUMENTS starts on p. 75

study of molecules by tearing them apart under a bombardment of electrons, and the infrared spectrometer, which reveals the composition of a substance by examining its ability to absorb or to pass infrared radiations.

Besides these detecting devices, scientists now use instruments to record and digest data. Electronic computers take only minutes or hours to work out calculations that might take the scientist years, or even a lifetime. Thus, these recording and calculating devices also open up ever more complex fields to research.

• **More Precision**—Progress in nuclear physics is the most sweeping and dramatic example of how one advance in science creates both a need and the means of satisfying the need.

Before World War II, most scientific instruments couldn't measure much closer than one part in a hundred. For nuclear research (as for research in radar and other wartime developments), 99% or even 99.99% precision wasn't enough.

Today, there are instruments that measure to an error of only one part in 100-million.

This didn't happen painlessly. At first, lack of adequate instruments was a major block to nuclear developments. The scientists who were cloistered in super-secret nuclear laboratories needed instruments unlike anything on the market. Yet the need for secrecy kept them from explaining these needs to the companies that might develop the instruments.

For a while, the scientists tried to invent the instruments themselves, but progress was slow and the diversion of talent was expensive to the main project. Finally, therefore, the atom researchers were allowed to swear the instrument makers to secrecy and tell them what they needed. Thus came the special electronic apparatus, the radiation counters, and the whole new family of instruments to control nuclear reactors and other atomic operations.

The nuclear reactor itself became a tool of the researcher. Radioisotopes are now used to detect leaks, to check the levels of fluids in chemical processes, and for many other jobs in medical, agricultural, and industrial research.

• **Supplements**—The new instruments and techniques supplement but do not supplant the older research tools. Hence, the instrument industry keeps on growing.

For example, the E. I. du Pont de

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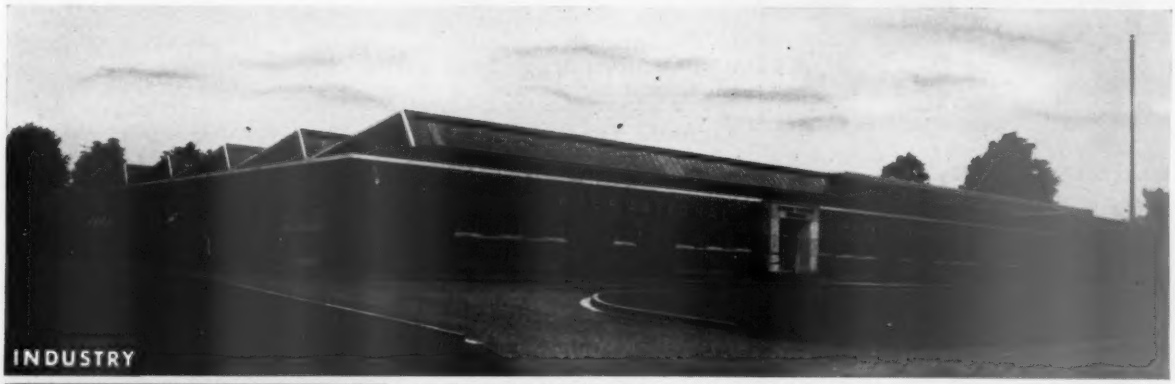

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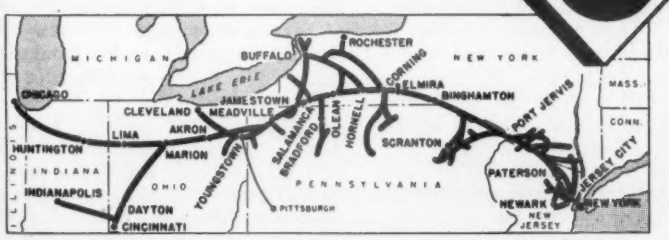

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Nemours & Co. engineering research laboratories at Wilmington, Del., are studying the surfaces of metals. In one laboratory are dozens of optical microscopes that are still adequate for much of the investigation. Down the hall is another room equipped with a modern electron microscope.

The optical microscopes aren't helpful, in this case, in studying the tiny areas between molecules, yet du Pont scientists feel these areas hold the secret of how metals corrode. With the electron microscope, they can study these minute spaces to get the answers they seek.

Some scientists, such as Prof. Jon Turkevich of Princeton, are concentrating almost entirely on the new areas of research that the newest instruments open up. Turkevitch is reopening the field of colloidal chemistry by working largely with the electron microscope. He's doing other work based on the mass spectrometer, the nuclear reactor, and a special electronic device that's now being put together. He hopes they'll carry him far beyond the points reached by earlier workers. They lost interest in the early 1920s because they came up to the limits of the tools then available.

• **Old Wine, New Bottles**—Turkevich gained much of his earlier scientific reputation through his work on catalysts, the substances that alter the rates of chemical reactions without themselves being altered. With his new mass spectrometer, he can re-do many old experiments that give him much more information than before, as well as setting up new experiments that wouldn't have been possible in earlier days.

Turkevich isn't sure exactly what we will discover in his work with the mass spectrometer; but whatever it is, it is something no one had previously known.

With his electron microscope (picture, page 75), Turkevich is undertaking a purely academic project on colloidal gold—gold in a special chemical state in a liquid. Already he has proved a theory that was proposed in the early 1900s by Gustav Mie, a German scientist. Mie worked out mathematically a theory that the color of colloidal gold was related to the size of particles. Until the electron microscope came along, there were no instruments to measure the size of particles.

• **Into Production**—The new laboratory instruments tend to drift to the production line. Thus radiation detectors for nuclear studies are being used to control chemical processes, and a continuous infrared analyzer has been developed to keep a constant check on output in manufacturing operations.

It works both ways, too. When engineers moved the radiation detectors and infrared analyzers to the production floor, they also developed instruments to keep continuous records from these and many other machines. These gadgets replace clerks in reading dials and making notes.

Now the research scientists are putting the recording devices to work watching laboratory operations, saving themselves a lot of note-taking.

In the end, scientists may entirely slough off their time-honored professional symbol: graph-plotting. Already they find instruments can gather the data and make the graphs while research people go about other jobs. In fact, the new recording instruments find out more facts and plot graphs more accurately, and do it in less time, than the sharpest scientist could do with his notebook and graph paper.

Atomic Dust Throws Calculations Off

Airborne particles from a 1952 atomic bomb test in Nevada that floated to New York State have been blamed for a 1,000-year error in dating the earliest inhabitants of the San Francisco Bay area.

The cross-country mixup began when Professor Bert A. Gerow, Stanford University anthropologist, unearthed the richest cache of ancient Indian burials ever found on the San Francisco peninsula. He sent samples of wood charcoal from the prehistoric graves to Columbia University for tests.

Part of the tests for determining age of such prehistoric specimens is to examine the small amounts of radioactivity given off by the charcoal—a technique called carbon-dating. The higher the radioactivity, the more recent the specimens.

• **Weighting the Results**—While the samples were awaiting tests at Columbia's Lamont Geological Observatory, airborne particles from Nevada bomb tests were blown across the country and deposited on the charcoal pieces, increasing their radioactivity slightly. When the tests were performed, radioactivity indicated the specimens were about 2,000 years old.

Gerow was puzzled by the results, which didn't seem to be in agreement with "typological" dating of artifacts and other characteristics of the burials.

To be doubly sure, he sent new specimens to Columbia for a recheck of the carbon-dating. The new check showed the burials to be about 3,000 years old—a 1,000-year difference from the original estimate.

Along with the new check on the dating, Stanford received an explanation of the error, which had also affected other specimens at Columbia waiting to be checked.

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RESEARCH BRIEFS

Cooperative research on fundamental chemistry will be sponsored under a new program set up by the Manufacturing Chemists Assn. The initial purpose of the program, started with a grant of $40,000 to Carnegie Institute of Technology, is to provide uniform data on the physical properties of chemical compounds. The program is patterned closely after that of the American Petroleum Institute (BW–Nov.21'53,p186).

•

Gasification of anthracite coal will be studied in a long-range experimental program conducted by Hydrocarbon Research, Inc., at its Trenton Laboratories for Philadelphia & Reading Coal & Iron Co.

•

Shellfish sanitation was discussed at a national conference for the first time in almost 30 years in Washington last week. The conference was called by the Surgeon General of the Public Health Service, Dept. of Health, Education, and Welfare, because shellfish have been implicated in epidemics of typhoid fever and other diseases in other countries.

•

Interlingua, an international language combining common elements of Spanish, French, Italian, Portuguese, and other Western languages, was used for the first time at a medical meeting at the Second World Heart Congress in Washington this week. The program carried abstracts in the new language of scientific papers presented at the Congress.

•

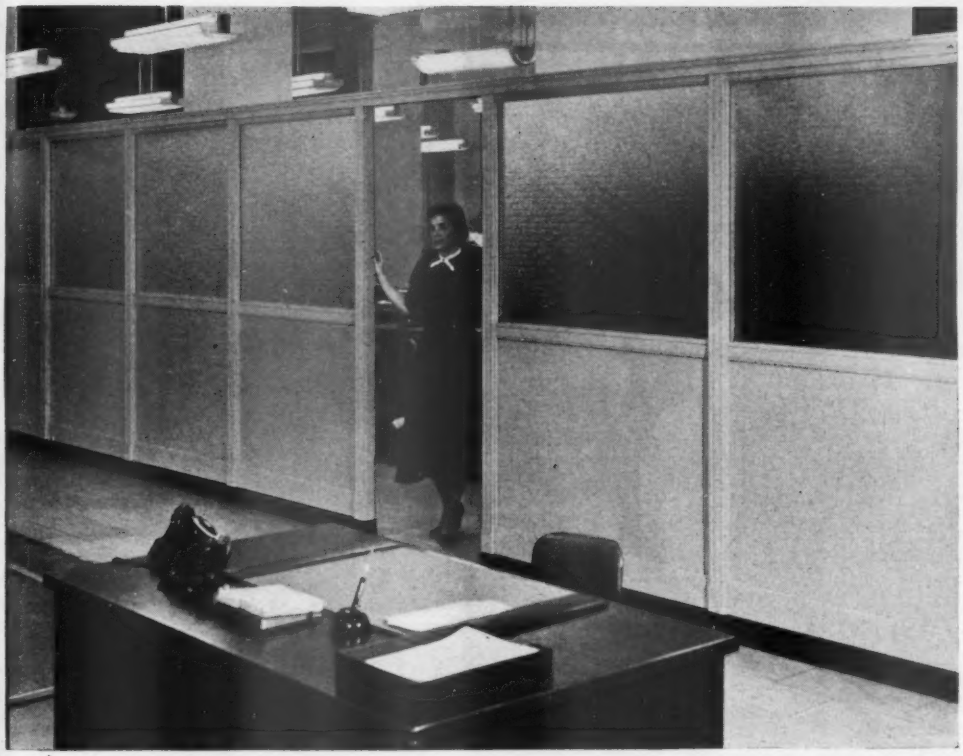
New antibiotics may eventually result from research announced by the University of Wisconsin. Prof. John T. Curtis announced that he has been studying the soil preferences of fungi, which produced the important antibiotics. Curtis hopes to get information assisting in locating particular fungi and in determining their value as producers of antibiotics.

•

Superfluid helium, liquid form of helium gas at temperatures near absolute zero (minus 459 F), may bring new understanding of the atom, according to scientists reporting to the British Assn. for the Advancement of Science. The liquid offers virtually no electrical resistance and tends to flow up and out of beakers, seeming to defy ordinary physical laws.

•

The brick and tile industry will build a national research center in Chicago, the Structural Clay Products Research Foundation has announced.



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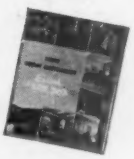

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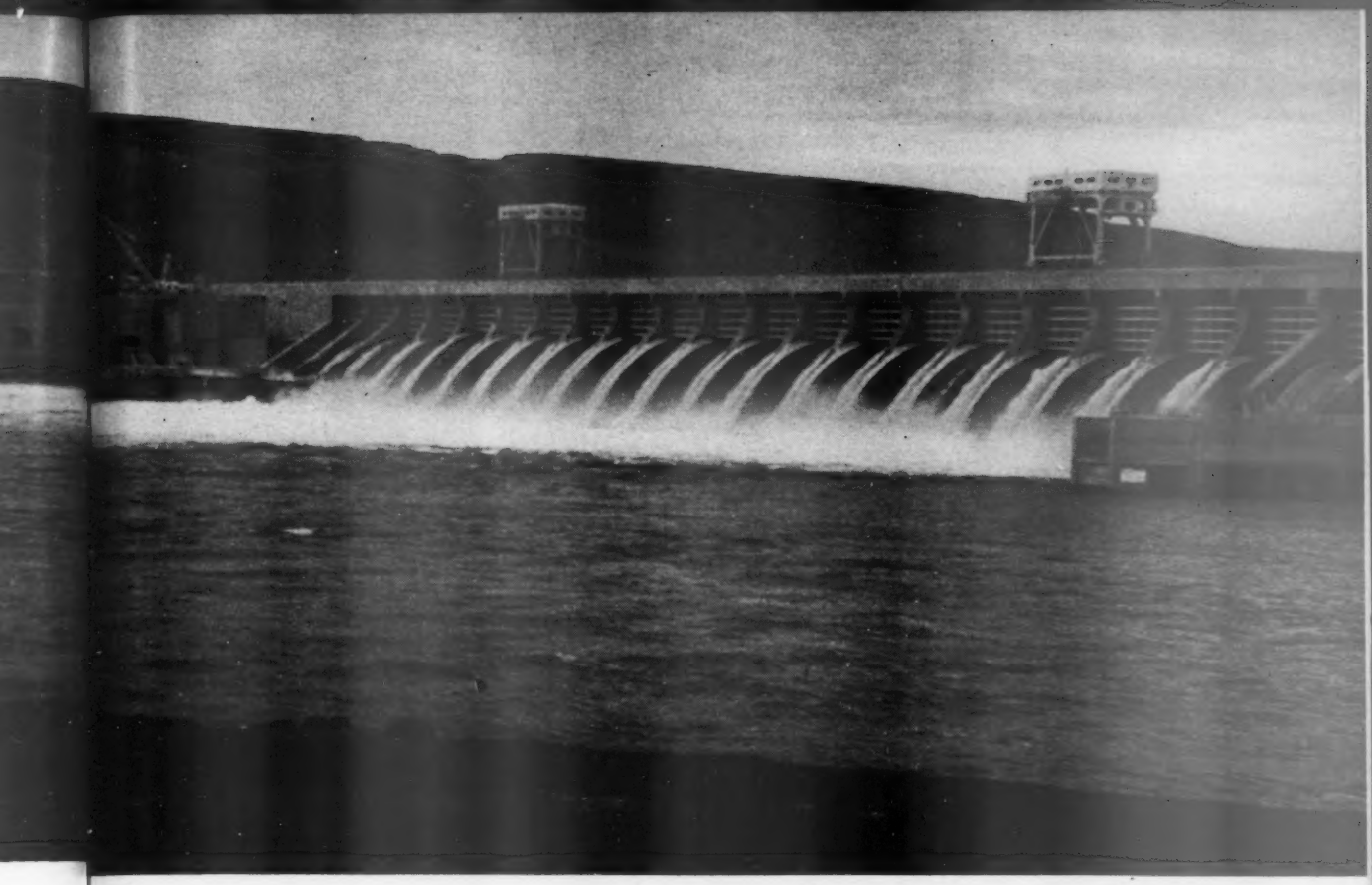
Atomic energy construction at nearby Hanford boomed the Columbia River cities of Richland, Pasco, and Kennewick (above), later tapered off. But in its backwash another boom was in the making, generated by power-harnessing McNary Dam (right), which flooded back Columbia waters into a 61 mi.-long waterway. McNary is now bringing new industrial growth and altering the thinking of a land-locked area.

McNary Dam

BARGES from downriver ports bring needed supplies such as oil through McNary's 92 ft. locks. Homing barges carry grain, other produce.

NEW INDUSTRY, such as Shell's ammonia plant, stretches along the waterway.



Remaking Land, People, Industry

(Story continues on page 84)

RAILROADING strengthens area's strategic traffic. Last week, Northern Pacific Ry. began work on this $5-million freight depot at Pasco, crossroads of eastbound traffic.

PRODUCING cattle, wheat, peas, lumber makes area big agriculture center.

TRAILER CAMPS, like this one at Kennewick, are now vanishing, but once made Tri-Cities a backyard bedroom for Hanford atomic works to the north.

NEW HOUSING heightens unfinished look at edge of Pasco's sagebrush land.

PLEASURE BOATING along McNary reservoir's 61-mi. stretch is big sport for inlanders, helps give land-locked natives a water-edge mentality. Kennewick dock (above) has best facilities for small craft; nearby Pasco attracts racing enthusiasts.

The Future Is Nourished by Water

(Story starts on page 82)

In Washington's lower Columbia Basin at McNary Dam—125 mi. downstream from Grand Coulee—once land-locked farmers are beginning to thumb through small-boat catalogs. Bulldozers are clearing water-edge industrial sites out of land that until recently was sagebrush and rattlesnake country. Next week, when Pres. Eisenhower dedicates the $287-million McNary Dam, latest power structure on the Columbia, a new era of water power and navigation will open for stretches of Washington's hinterlands.

The excitement over Eisenhower's visit to this Republican area, which doesn't often see a President, is only a small part of the general enthusiasm sweeping over the region.

You get the feel of this excitement when you hear how, northward, rich farmland has been steadily rising out of the sagebrush, how slackwater stretches are opening traffic lanes to barge out the region's produce of wheat, peas, livestock, or to float in raw materials to the key cities of Pasco, Kennewick, and Richland—330 mi. inland from the Pacific. And along the banks of the 61-mi.-long McNary reservoir, processing and distribution plants are beginning to stretch upward, fed by the energy of harnessed water.

• **Skyrocket**—Before the war, the Tri-City region was an almost untouched, dusty, and peaceful home for some 6,000 dry-wheat and grape farmers. But when the Atomic Energy Commission chose Hanford as a site for its plutonium works, the area suddenly boomed. Richland, northernmost of the Tri-Cities, found itself in the middle of overnight construction, and Pasco and Kennewick became bedrooms for AEC workers at Hanford. The Tri-Cities were soon overcrowded and harried, a confusion of trailer courts and high prices. Then the Hanford boom began to ebb, and with it the area's booming economy.

But today, now nourished by a waterways economy provided by McNary Dam, the area is beginning to boom again. Water, in the form of power from McNary Dam and inland navigation on McNary's reservoir, is bringing new industry, new thinking, and new possibilities to the area. In 10 years, population has climbed within reach of 75,000.

• **Industrial Muscle**—Power from McNary dam will be provided by 14 generators, half of which are already in

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operation, with full-scale power expected by 1958. The generators will have a total rated capacity of nearly 1-million kw., or enough to supply a city of 750,000, an area slightly larger than metropolitan Seattle. Through-navigation in this last stretch of the Columbia from the Pacific to the Tri-Cities is made possible by a series of locks at one end of McNary Dam, which claims the world's largest single lift—92 ft. (BW—Jan.9'54,p31).

This navigation and the power from McNary will bring to the area new industrial growth, possibly unmatched in any other single area in the country.

I. Building a New Life

McNary Dam stretches nearly 1½ mi. across the Columbia River. Upstream, McNary reservoir—340 ft. above sea level—backs up through steep cliffs. Then past Wallula gap, the reservoir widens to a breadth of 3 mi. Here, on the low easy banks near the Tri-Cities are the sites of projected industry.

• **Catch-All**—To understand the industrial importance of the Tri-Cities, picture the area as a funnel of three important river flows (map, page 82).

From the west flows the Yakima River, barging in produce from the rich, irrigated Yakima Valley—one of the state's first major irrigation projects. From the north, the Columbia River sweeps down, past Columbia Basin's irrigation, which every year turns parched acreage into productive land. From the east comes the tortuous Snake River; with further dam construction upriver, it will provide slack-water navigation as far inland as Lewiston, Idaho, a center for wheat and pea farming, livestock and pine lumber.

Along the shore of McNary reservoir run major railroads: the trans-continental mainline of Northern Pacific Ry. at Pasco and Kennewick, Union Pacific RR, and Spokane, Portland & Seattle Ry.

These transportation links make of the Tri-Cities a natural import-export basin for a growing farm area and a logical center for industrial growth.

• **Key to Growth**—Though the Hanford atomic works gave the area its initial postwar growth, the key to its rapid expansion is the industrial and economic possibilities opened to it by the McNary's water power and navigation facilities. Where once the Tri-Cities were simply backyard bedrooms for Hanford's plutonium facilities to the north, today, the area is building its future out of the water McNary Dam brought to its waste lands.

New housing, new shopping centers, expanded commercial facilities are replacing the jammed trailer courts and confused shopping streets.

In Pasco, Sears Roebuck & Co. has

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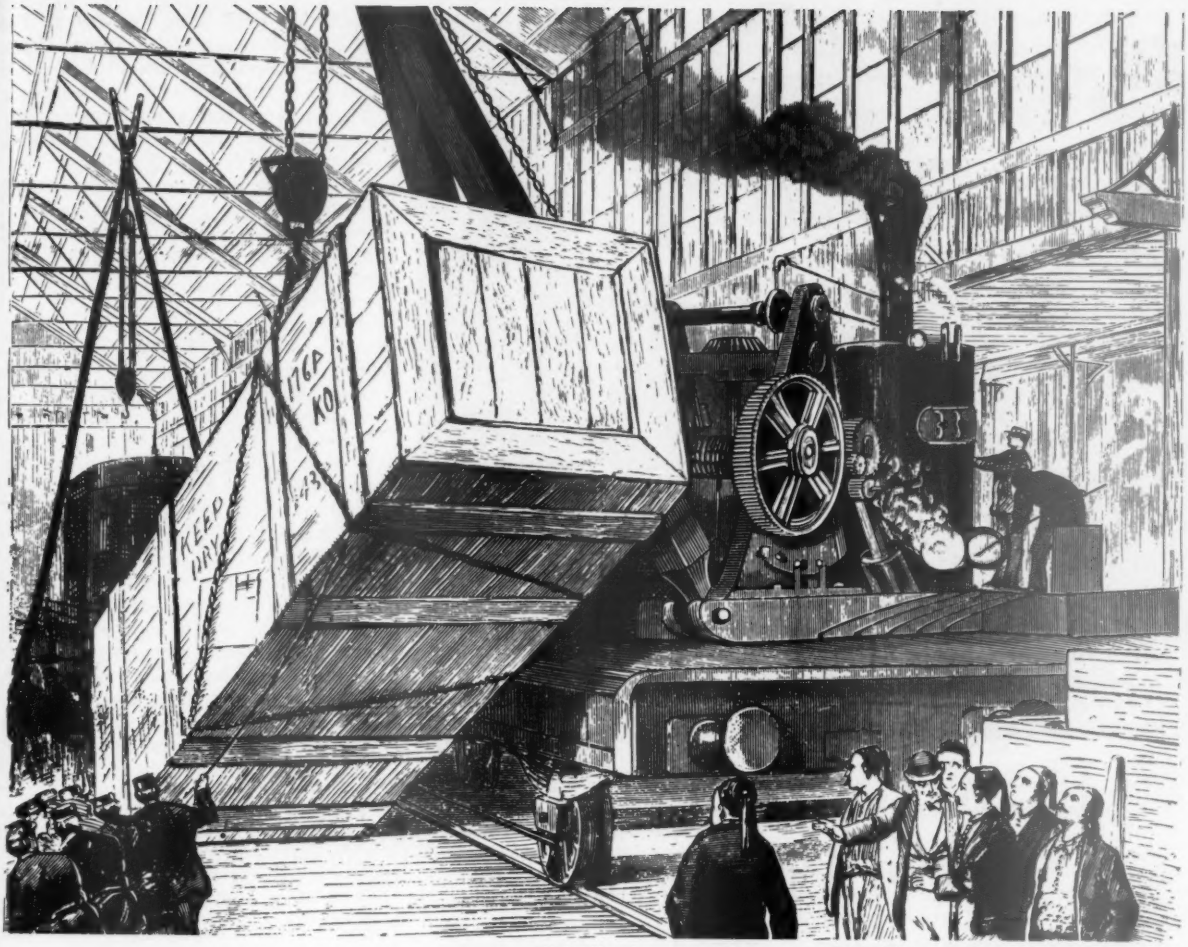

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opened a retail store, its first in the 132 mi. between Yakima and Walla Walla. Several wholesalers have opened outlets in the same city, fast becoming a commercial center for farm machinery and wholesale hardware. Richland, growing seedy since the ebb of Hanford's boom, has a new retail shopping district, and is breaking ground this month for a 38-acre tract that will double present shopping facilities. Kennewick is in the midst of commercial and residential construction.

• **Upward Stretch**—There is no mistaking that the area is preparing for gigantic industrial development. All three cities are dressing up to attract new industry.

Kennewick has ambitions to enlarge its port district to embrace all of the north and west banks of the McNary reservoir and Columbia River, from below McNary up to the Yakima River near Richland. Object of an expansion proposal, now entered on the ballot for approval in November, is to provide industrial sites and a large enough tax base to support development. At its widest point, Kennewick's port, which already has grain-loading facilities, would be about 26 mi. by 30 mi. Its interior is the high rolling plateau of the dry-wheat belt known as Horse Heaven Hills.

• **Growth Leader**—But by far the most aggressive of the three cities is Pasco, a natural industrial and distribution center. Last week, Northern Pacific Ry. began construction on a $5-million freight classification yard at Pasco, crossroads of eastbound traffic from Portland and Seattle.

Just outside Pasco, on the banks of the Snake River, is Standard Oil Co. of California's terminus for a common carrier pipeline, which pumps oil products from Salt Lake City. The terminus has facilities for loading and unloading river barges and rail cars. Nearby is the newly completed oil farm of Tidewater Terminals Co. with it own port. A stone's throw beyond are new storage facilities for Permanente Cement Co. Cement is freightered in from California, barged at Portland, then stored at Pasco for rail and truck distribution.

Also under construction at Pasco are two major facilities for storage of ammonia, owned by Brea Chemical Co. and Shell Chemical Corp. Ammonia products are used in increasing quantities on inland wheat farms.

• **New Horizons**—Even a city like Walla Walla—not actually on water—has turned its eyes on river traffic in the past two years, ever since local businessmen, the Grange, and Farm Bureau began thumping for the creation of a Walla Walla port district.

The port idea is now being sparked by plans for a $12-million ammonia

Metropolitan dollars come home to roost!

LAST YEAR, Metropolitan benefit payments to policyholders and beneficiaries exceeded $1,000,000,000—an all-time record in the history of Life Insurance. Each of the Company's 1,000 local offices paid benefits, on the average, of over $1,000,000—tangible evidence of the value of Metropolitan's localized services. Undoubtedly, many of these dollars flowed into your own community.

These benefits did not just happen. They resulted largely from the efficient and faithful efforts of Metropolitan Agents—men who sought out those in need of Life insurance, diagnosed their requirements, and developed individualized plans to help protect families in a manner consistent with their hopes, ambitions, and circumstances.

To illustrate the benefits which Metropolitan's benefit dollars made possible in 1953, let us take a good American city like Indianapolis, Indiana. Metropolitan policyholders and beneficiaries in that city received $4,900,000 last year. There follow several cases which indicate the benefits which some of these dollars made possible.

1. On July 4, 1953, a Metropolitan Agent celebrated the holiday at the home of a good friend, an Indianapolis dentist. The dentist was devoted to his son whose ambition was to follow in his Dad's professional footsteps. Over the years, the Agent had urged the dentist to help assure the fulfillment of the boy's ambition in the event something unforeseen happened.

The holiday was especially significant because it was also the occasion on which the Agent delivered to his friend a $30,000 policy to make certain the son's dental education, plus a "nest egg" with which to begin practice. The following November, the dentist, who had never been sick a day in his life, passed away. Today, the son is in a well-known state university getting the coveted education—thanks to the love and foresight of a father.

2. A local Metropolitan Agent was startled to read in a newspaper that a middle-aged policyholder had been thrown from his automobile and had sustained severe back injuries. He called immediately at the home of the injured man to offer help in preparing claim papers and arranging for payment of immediate expenses.

Upon arriving, he found the injured man's wife nearly frantic and greatly concerned about the forthcoming medical bills which she had no money to meet. She was astounded to learn from the Agent that her husband had only a short time before taken out a substantial accident policy with Metropolitan, but had forgotten to tell her about it. She was greatly relieved to know that the medical bills would be taken care of . . . in fact, the Company ultimately paid $1,900.

3. The efforts of Metropolitan Agents are not always completely successful, and such instances emphasize even more "what might have been" if the breadwinner had protected his family with adequate Life insurance. Consider the case of two Indianapolis families which lived directly across the street from each other last year.

One family still lives at the old address. Metropolitan dollars are being used to help keep the family together, pay off the mortgage on the home and help educate the four children—despite the fact that the father died suddenly. Unfortunately, the father of the family across the way passed on without securing the adequate coverage offered by the Metropolitan Agent. As a result, his widow and two small children had to move to the home of her parents.

These Indianapolis cases typify some of the results of actual services that Metropolitan Agents have been and are continually rendering all over America—helping fathers and mothers safeguard their homes against the uncertainties of life. Yet, there are other ways—such as through investments—that "Metropolitan dollars come home to roost"!

Up to the time Metropolitan is called upon to make payments under policies, it invests and reinvests funds to help earn money for such payments. In all likelihood some of these investments are in your community helping provide jobs, as well as the comforts and conveniences of life.

Yes—in many different ways "Metropolitan dollars come home to roost." Every one of these dollars reflects the efforts of some Metropolitan Agent, points up the fact that he is an understanding friend and neighbor, and that . . .

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production plant to be built by Columbia River Chemicals, Inc. It will be the first major ammonia plant in the Pacific Northwest, will produce anhydrous and aqua ammonia, urea, and ammonium sulphate.

• **Shifting Land**—You get a clearer picture of the immense changes that were wrought on these shoreland sites, and the problems places like Walla Walla faced, when you realize how the whole land around McNary had to be shifted. Army engineers, who built the dam and bought the shoreland, had mapped out a comprehensive plan for industrial development, recreation, and wildlife preserves. When McNary was built, the water back of it had to be raised, railroads relocated, highways shifted.

Because the Army owned the shorelands, the Port of Walla Walla had to work out leases for industrial sites in Walla Walla County at Attalia, Wallula, and Burbank. A 50-yr. lease with the Army has now stimulated the port into spending $350,000 for a channel, turning basin, and a 1,350 ft.-long dock at Attalia. In turn, Columbia River Chemicals, the site's big customer, will pay half the cost of site development and a yearly rental.

The port has also filed to take over all the shorefront from Attalia to Burbank, formerly planned as wildlife preserves. An industrial area this size would be the largest potential tract on the McNary pool.

• **Open Question**—In such an area just emerging as an industrial power, there is still no general agreement on what kind of industry will predominate. But ask anyone from Richland to Walla Walla, and you get these answers:

• It will be an agriculturally-based industry. Certainly fertilizers to supply present and expanding farm tracts will be a big part.

• If fertilizer industries are located here, then related and accessory industries will grow. Processing and distribution plants to serve the farm hinterlands will follow.

• Later perhaps, there will be manufacture of specialized tools and equipment for farming needs, and manufacture of aluminum pipe—used extensively in irrigation—and other aluminum products.

• In addition, there will probably be integrated mills to cut lumber brought down from the Blue Mountains behind Walla Walla, with perhaps a pulp and paper plant as part of the unit.

II. Carving Out a New Future

All these changes could take place only because water has been brought to the land. Like a system of industrial development in which one industry fathers another, water has brought with

pioneering developments keep **WHEELABRATOR®** *first in blast cleaning*

Before Deflashing

After Deflashing in a Wheelabrator

Where A Good *Finish* Is The Best Beginning

Wheelabrator Airless Blast Cleaning Solves Die Casting Finishing Problems Saves $2000 Monthly For Racine Die Casting Co.

Compare the finish on the surface of the two pieces illustrated above. Note the surface uniformity and the complete absence of flash and burrs on the casting at the bottom, photographed immediately after finishing in an airless Wheelabrator at Racine Die Casting Co.

Not apparent in the pictures, however, are the manifold savings effected in overall finishing operations by this problem-solving mechanical method. Practically all manual punching and filing and trimming operations have been eliminated — at an estimated $2000 monthly saving.

In addition, the uniformity and thoroughness of cleaning obtained with the Wheelabrator facilitate inspection — making detection of laminations and surface defects readily apparent. Customers no longer reject castings because of poor paint adherence. Time and cost of testing to reveal porosity of castings have been slashed.

If you are producing die castings, the Wheelabrator can make similar savings for you in your finishing operations. Its advantages are not limited to die casters, however. The Wheelabrator is profitably being used for cleaning or finishing forgings, weldments, castings, heat treated parts, stampings, etc. If the finish is important on your product, investigate what the Whelabrator can do for you. Write today for details.

Bulletin 74-B tells "What the Wheelabrator Is and What It Will Do For You." Send for your copy today!

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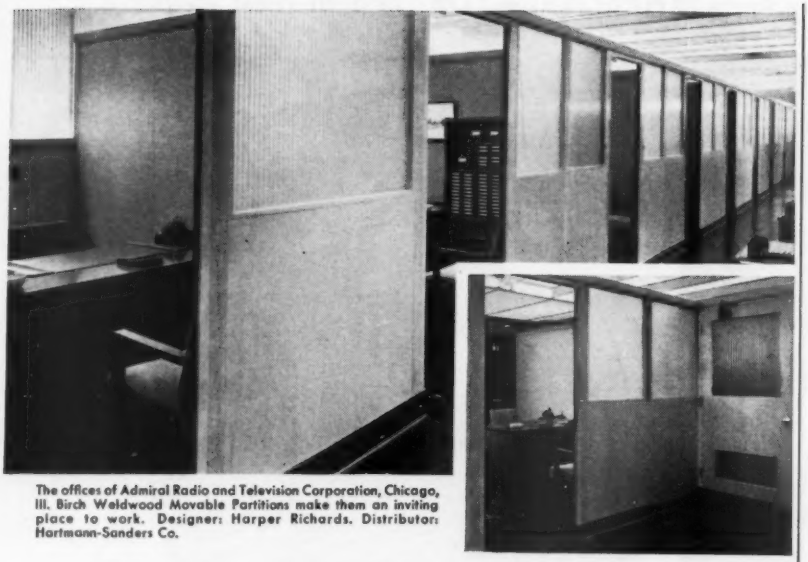

The offices of Admiral Radio and Television Corporation, Chicago, Ill. Birch Weldwood Movable Partitions make them an inviting place to work. Designer: Harper Richards. Distributor: Hartmann-Sanders Co.

Flush movable partitions with the beauty of real wood

Weldwood's simple interlocking feature makes rearrangement possible on a week end or overnight

There is nothing that matches the warmth and beauty of *real* hardwood partition panels. When this natural beauty is combined with *low cost movability* it's a combination that is hard to beat. Handsome birch is standard; any wood is available on order.

FOR OFFICES ON THE MOVE. Unique metal keys which lock the panels together make it a simple matter to rearrange them. There are no screws. Snap-on matching post cap between panels hides telephone and electric cables.

TYPES OF PANELS include cornice and ceiling height, glazed and low railings. Door and wall panels may be interchanged without disturbing adjoining panels. Available in standard sizes.

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GUARANTEE: Weldwood Partition Panels are *guaranteed for the life of the installation!*

MAIL COUPON or call any of the 73 United States Plywood or U.S.-Mengel Plywoods showrooms, in principal cities.

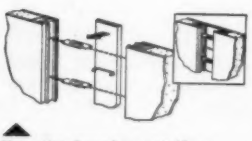
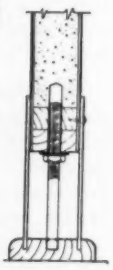


Illustration shows how metal keys slip into keyways to lock panel. Opening in key provides hidden space for B X cable. Spring clip on post cap snaps on, closing space between panels.



Cutaway view of floor base assembly. Two leveling bolts per panel make adjustments easy.

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• **From the Ground Up**—In this kind of country you have to start from scratch. A farmer begins with nothing but land. He has to build a house to live in; drill a well for drinking; buy farm machinery, house it; buy livestock or seed. Then he and his neighbors have to build roads, schools, power lines, and towns to supply the farm and take its produce.

The cycle enlarges year by year. Money is poured into the region to build its agriculture and keep it supplied. There is a continuing need to transport agricultural produce.

Underneath the ever-enlarging cycle is the constant presence of water. Water has started the whole cycle and is needed to keep it in operation.

• **New Mentality**—But it is not just that water has created new industries, provided traffic lanes for the inflow and outflow of goods. It has also changed the habits and outlook of a landlocked region.

Take the farmer who started out with nothing but land. Years ago, wherever he looked, he saw nothing but flat land or plateau land, mountain land, sagebrush land. Today, he's beginning to understand what it is to own a boat. Or take the Portland boat enthusiast who can now slip upriver as far as Kennewick and Pasco.

REGIONS BRIEFS

Lake Erie ports are busy drafting plans to take on more shipping via the St. Lawrence Seaway. Toledo's planners last week were presented with blueprints for a $20.6-million cargo terminal and a $5.9-million waterfront improvement. Ashtabula, Ohio; Erie, Pa.; Cleveland, and Buffalo are in the process of organizing port commissions in preparation for heavy "ocean port" business.

•

Highway spending in Pennsylvania last month broke all existing monthly records. The August total—$21.2-million—was about 50% higher than any previous month. It raised the eight-month total for the year to a high of $92.4-million.

•

Phoenix (Ariz.) **landowners** will get small strips of additional property free of charge from the government. Pres. Eisenhower last week signed a bill that will give more than 1,000 residents ownership of abandoned canal rights of way. As the city grew, the canals were abandoned and the property rights were still in government hands, even though homes were built over them.

DIAL THE SPEED—CONTROL THE PROCESS

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- **Offers automatic control integrated with your process.**
- **Covers a wide speed range—forward or reverse.**
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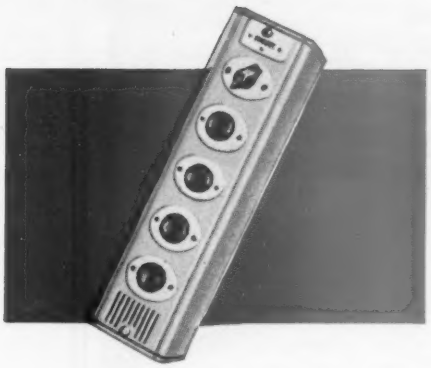
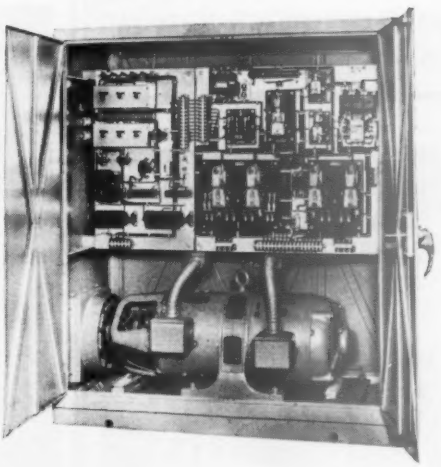
- **Controls one or more motors.**



With a Century Performance Rated Selective Speed Drive, you can often integrate speed changes to cycle automatically as the process requirements dictate.



- You can automatically regulate metal cutting for optimum cutting speeds.
- Make the speed change automatically sensitive to changing temperature or pressure.
- Make the speed change automatically sensitive to changing diameter of a feed roll.
- Make the speed change automatically sensitive to the viscosity of a mix.
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You're welcome to full information on your specific drive problem. Call your nearest Century District Sales Office or Century Authorized Distributor, or write direct. See telephone listings.

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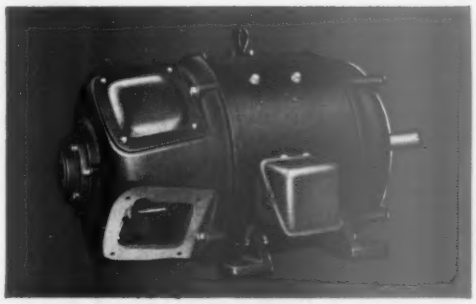

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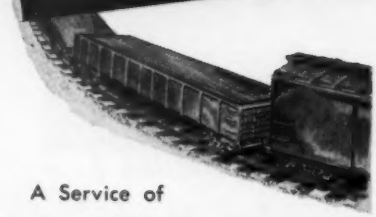
The MORRISON PLAN enables railroads and industrials to secure needed rolling stock at less than per diem charges – without any capital investment.

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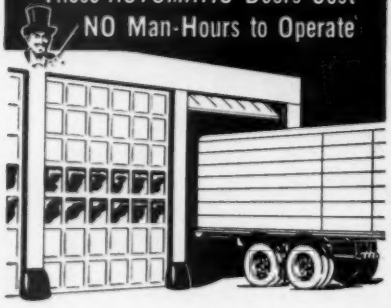
Crawford Marvel-Lift Doors SAVE THEIR COST many times over.
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Crawford Marvel-Lift Doors, wood or steel, with famous Crawford Marvel-Lift Mechanism, fit all openings up to 30 x 18 feet. Push-button or radio remote control. Backed by a nation-wide door service organization.
Call local Crawford Door Sales Co. listed in classified phone book under "Doors". Or, write direct for literature.
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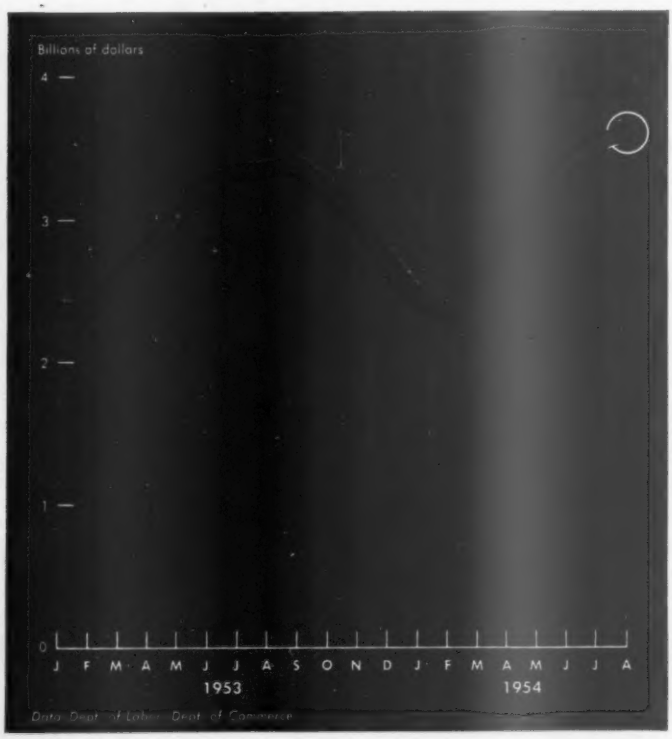
Unemployment Claims

New claims for unemployment insurance have moved downward for seven consecutive weeks, but are still about 75,000 more than one year ago. Except for the usual seasonal rise in July (due in part to vacation layoffs), new claims have moved generally downward since the first week in May. Now new claims are at the lowest level since October, 1953. The Bureau of Employment Security reports the reasons for the decline as follows: (1) the reopening of plants following vacation shutdowns, (2) seasonal expansions in a number of industries, (3) recalls in electrical equipment, fabricated metals, and textiles. The Bureau also reports that the number of claimants who have exhausted their benefit rights has shown some decline.



Construction: Record

Construction continues to be a bright spot in the economy. Expenditures for new construction in August rose 2.6% from July to a new record of $3.6-billion, according to Labor and Commerce Dept. estimates. Most of the increase came in private residential building, public utility construction, and highway work.

Dollar volume for the first eight months of 1954 reached a new record of $23.7-billion.

Lowest of the Year

Truck Output: Another Drop

Domestic truck output (chart) is scheduled for its sixth successive monthly decline in September. The 64,000 completions scheduled for September are 12% less than August's 72,935 trucks, and 37% under the 1954 peak set in March.

Ward's Automotive Reports indicates, however, that the truck industry is optimistic. If September sales continue as expected, at about the August level, September dealer inventories would stand at about the same level as a year ago. With sales lower, however, inventories will look higher than they did a year ago. Even if sales are strong, it is hard to see how the industry can produce its hoped-for 1-million units.

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MARKETING

34TH STREET AREA is New York's big shopping district for the middle-income trade; just now it's tallying up the first effects of Ohrbach's month-old move uptown from . . .

14TH STREET, the bargain center for lower-middle-income shoppers in New York; so far, downtown, uptown, Ohrbach's itself—everybody claims there's a gain when . . .

A Store Leaps the Gap

It's not very far from 14th Street in Manhattan to 34th Street. Only 20 city blocks—about a mile. But in another sense it's a good, long way. For those 20 blocks measure precisely the gap between New York City's major lower-middle-income shopping street and its great middle-income shopping district, where Gimbels and Macy's are located.

That's why there was so much interest last month when Ohrbach's, Inc., pulled up stakes on 14th Street and moved into the old McCreery department store building on 34th Street (BW—Nov.14'53,p41). Ohrbach's was following—several decades later—the general uptown movements of New York's bigger department and specialty stores.

What happens when you move a powerful low-cost, cash-and-carry women's clothing store like Ohrbach's into such a totally new neighborhood? What

happens to the old neighborhood? To the new one? To the store itself?

• **Short-Run Answer**—The four weeks since the actual move give too short a time to have all the answers. But last week, S. Klein on the Square, Inc., big member of the Grayson-Robinson chain, handed in a vehement short-term reply. In reporting that Klein's had passed the billion-dollar mark in sales, Pres. Hyman P. Kuchai said his store had had the best August in its history. The really big increases, he stated, showed up after Ohrbach's moved uptown. So far in September, the accelerated pace has continued, Klein's reports.

Klein's even goes so far as to say that as much as $10-million or $15-million of the $20-million-odd annual business Ohrbach's did on 14th Street is still there. "The Ohrbach store is dark," says a Klein official, "but this street doesn't look like a funeral. We'll never leave 14th Street."

The other big 14th Street stores say the same thing. Lane's women's apparel shop says August and September sales are more than 20% ahead of last year's like period. Hearn's venerable department store, agrees that 14th Street is still the big bargain street of the world. "We're staying here," says its president, Clement V. Conole.

• **A Trend**—However, all New York department stores are ahead of last year, when a blistering heat wave drove customers from the shops. The Federal Reserve Board index for the week ended Sept. 4, 1954, gave New York a 31% jump over last year. For the four weeks ended Sept. 4, New York department stores showed gains of 10%.

Furthermore, Klein's, always a promotion-minded concern, has been through a special promotion to celebrate its billion-dollar mark; Lane's is also in the throes of an anniversary sale.

• **Uptown**—Meanwhile, Ohrbach's new competitors uptown are laying claim to those same customers and dollars that Klein's insists have stayed downtown. "Traffic and sales are both up since Ohrbach's came," says a Gimbel's spokesman. "We consider the move a plus for us." A Macy's spokesman agrees. "It has been a boon for us, too," he says. "Now 34th Street is so crowded you can't walk on it.

In their newly redecorated and modernized headquarters, Ohrbach's officials are jubilant. Says David Berks, executive vice-president, "Traffic and sales are fantastically above our expectations." He is realist enough to expect that the near-subway-rush proportions of store traffic will level off; some of it is certainly due to the

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Why should *any* businessman who takes every precaution to protect his property during his lifetime fail to protect his *estate?* Experience shows that it is unwise to rely merely upon the reputation and experience of an executor and trustee *when the protection of a corporate surety bond is available!* Many a trusted executor has seriously depleted an estate through mismanagement, incompetency or plain dishonesty! Recent newspaper items from New Jersey to California attest to this fact!

Whatever the size of your estate
—protect it by specifying in your will that your executor or trustee give a Corporate Surety Bond.

Speak to our agent* in your community. You'll be surprised at the low cost of this valuable protection.

* *If you don't know his name—our Agency & Production Department will supply it promptly on request.*

AMERICAN SURETY COMPANY
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FIDELITY • SURETY • CASUALTY • INLAND MARINE
HOMEOWNERS • ACCOUNTANTS LIABILITY • AVIATION

". . . thinks it might even be able to sell at a lower price . . ."

STORE JUMP starts on p. 96

fancy newspaper, radio, and TV promotion with which Ohrbach's heralded its move. He notes that a lot of the 34th Street customers are new to Ohrbach's, a greater number than the store expected.

• **Shifts in Taste**—So far, then, everyone claims to be the winner. It is interesting to explore a little the grounds for the optimism of both schools: the stay-at-home group and the move-after-'em store. Here's the way the trade sees the picture.

Customers on 14th Street are traditionally a highly price-minded lot. Many of them are local, from New York's Lower East Side. But, as everyone knows, the lower-middle-income group has been marching steadily up the income ladder for the past decade or so. Its taste has upgraded along with its income.

Even while Ohrbach's was still on 14th Street, it responded to this change by putting greater stress on higher styling in merchandise, upgrading in quality while it still stuck to its policy of low markups, cash-and-carry selling.

The trade feels, and Ohrbach's own action implies agreement, that Ohrbach's in fact, outstripped its own immediate market, that its customers were no longer typical 14th Street customers. Some of those nontypical customers began to weary of the trek to 14th Street when their normal marketing circuit was closer to 34th Street. The answer was to move the store to keep pace with the market.

• **Stay-at-Home Changes**—The trade notes some changes in the 14th Street stores. Hearn's has gone all-out for self-service in the past two years in an effort to cut costs, rebuild business.

Klein's, too, has changed. It became famous as an outlet for distressed goods at fabulously low prices. But now the trade sees it more as another unit in the Grayson-Robinson chain, a group of low-priced stores in the category of the Lerner stores. Klein's reports, however, that it will probably upgrade to some extent in an effort to keep up with the customers on the street. If it does, this would fit into the changing character of the street itself. Some of the big postwar housing projects on the East Side have attracted a new kind of customer to the area.

• **Questions**—In moving to its flossy new headquarters, Ohrbach's, too, has upgraded despite the reluctance of Ohrbach people to admit it. It is putting more emphasis on its medium and

STYLES HAVE CHANGED IN DRY CLEANING, TOO!

If you have a dinner date tonight, or a party, and the suit you want to wear is soiled . . . don't worry about it, if you have as much as an hour or two. There's probably a quick-service cleaner nearby. And chances are he'll use Perchlorethylene—a relatively new and highly efficient solvent—to make your clothes clean as new in a jiffy.

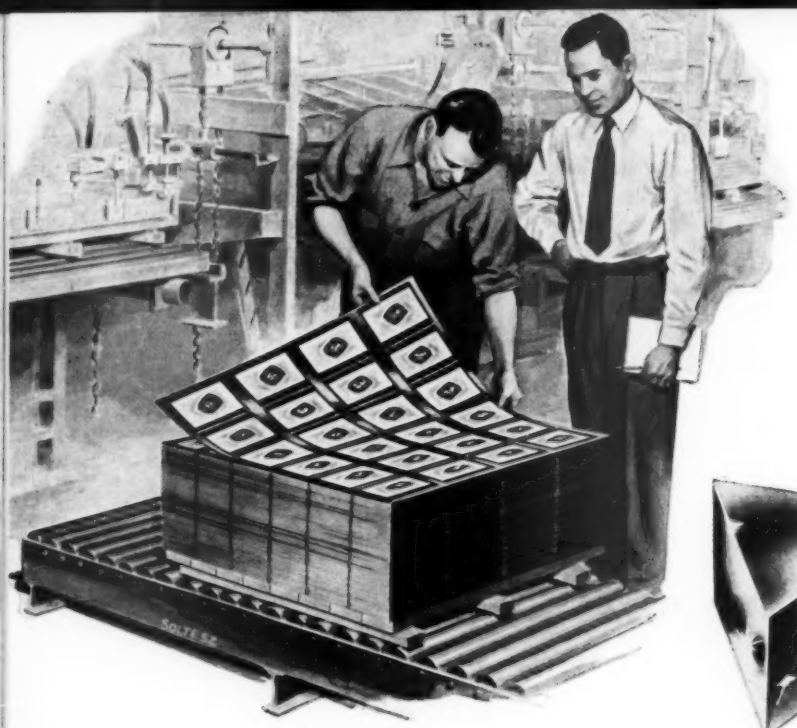
Today, fast service cleaning is big business in America. The latest count is 3,358 shops and the number is continually increasing. Modern living, with its larger wardrobes of light-colored clothes and improved ideas of cleanliness, has demanded this new industry. The ability of cleaners to furnish speedy service is dependent largely upon Perchlorethylene and on the cleaning equipment designed to handle this solvent.

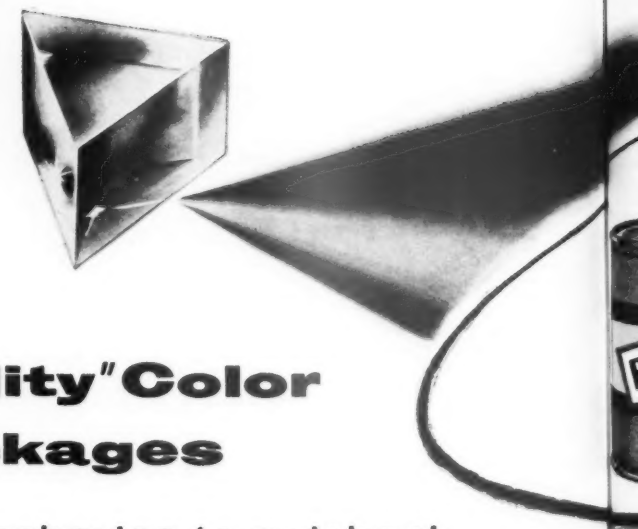
Perchlorethylene saves you time, and it is kind to your clothes. The dry cleaner likes it too because it enables him to give you super-service, and because its nonflammable qualities enable him to secure more favorable locations for his shops.

Columbia-Southern® is a leading manufacturer of Perchlorethylene, as well as other chemical specialties derived from the basic production of chlorine and alkalies.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
SUBSIDIARY OF PITTSBURGH PLATE GLASS COMPANY
ONE GATEWAY CENTER · PITTSBURGH 22 · PENNSYLVANIA

CHLORINE, ALKALIES AND RELATED PRODUCTS • OFFICES IN PRINCIPAL CITIES





"High-Fidelity" Color on packages

It sells products from anchovies to zwieback

In this self-service age, responsibility for catching the buyer's eye rests *squarely on the package.*

This is a tremendous challenge to Continental packaging specialists. Each package they decorate must be as true to the original art work as trained eyes and sensitive equipment can make it, regardless of urgency.

To achieve high-fidelity color reproduction on many types of packaging materials, we have found it necessary to master six different decorating methods.

LETTERPRESS. The oldest form of printing—from raised type and illustrative matter—is used for paper cups, bags and wraps.

LITHOGRAPHY. Uses a level metallic sheet on which printing images are made ink-receptive and the surrounding area is made ink-repellent. The ink is transferred to a rubber sheet and thence onto metal sheets for making decorated cans, bottle caps, boxes and Decoware.

GRAVURE. Matter to be reproduced is etched below the surface of the cylinder, with cells varying in size, not in depth. Ink actually builds up on the surface of paper, cellophane and other materials to give a brilliance and range of values unmatched by other high-speed processes.

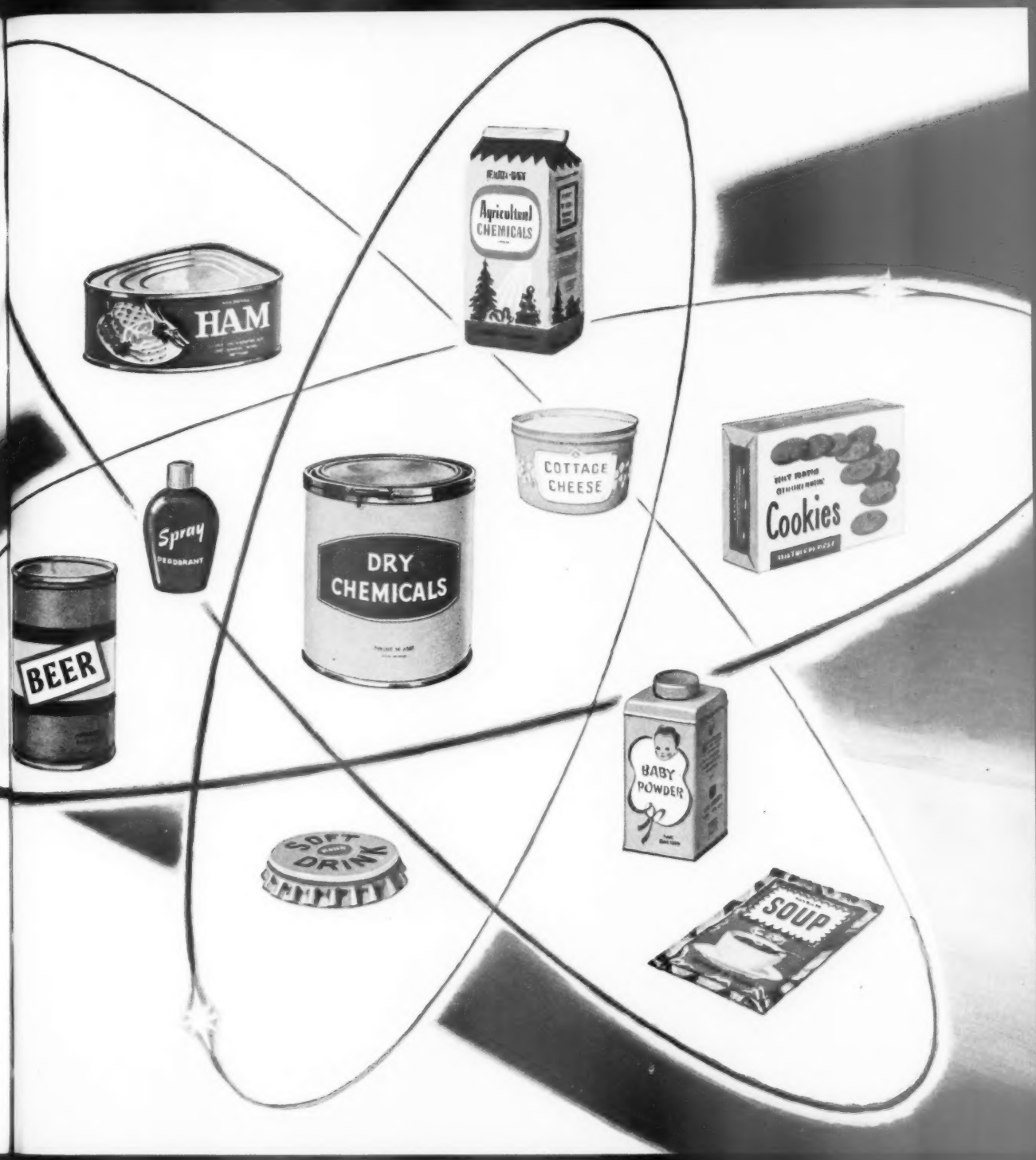
FLEXOGRAPHIC. For printing cellophane, foil, waxed papers, paper containers and non-absorbent surfaces on which usual inks are slow to dry. The special inks dry by evaporation.

SILK SCREEN. Enamel is forced through cloth or wire mesh to form the design. Used for decorating fibre drums and steel containers, and when luminescent colors are specified.

SPRAY AND ROLLER COATING. Spray is used to apply any of 17 base colors to fibre drums. Rollers are used to apply any of 66 different shades to metal sheets before lithographing. Both methods are used to apply a protective film of clear varnish over printed designs.

With all this experience at our finger tips, with a large variety of packaging materials to work with, Continental can give the best in tailor-made protection and beauty to products from anchovies to zwiebach.

SERVING INDUSTRY . . . SERVING AMERICA
You are always close to Continental Can with its 78 plants in the United States, Canada and Cuba, 17 field research laboratories and 66 sales offices.



CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING — 100 E. 42nd ST., NEW YORK 17, N. Y.

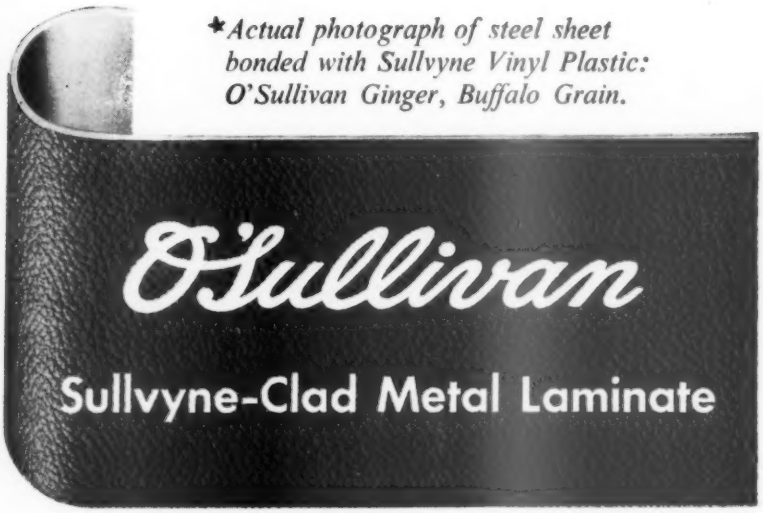
Continental Can Company of Canada Limited, Montreal

Sensational New Process Puts Beautiful, Durable Finish on Your Product Before It's Made!

Now, a pre-finished sheet you can bend, stamp or deep-draw

FOR PRODUCTS SUCH AS

Air Conditioners
Aircraft
Appliances
Automobiles
Baby Carriages
Building Materials
Business Machines
Busses
Containers
Electrical Apparatus
Furniture
Hardware
Hospital Equipment
Housewares
Luggage
Office Equipment
Photographic Equipment
Radios
Restaurant Seating
Sporting Goods
Toys
Vending Machines
Washing Machines
And all other products with finished metal surfaces



Actual photograph of steel sheet bonded with Sullvyne Vinyl Plastic: O'Sullivan Ginger, Buffalo Grain.

Patents Pending

SULLVYNE-CLAD Metal Laminate is a bond of vinyl plastic on metal sheeting—steel, aluminum or magnesium. Production-wise, Sullvyne-Clad is completely flexible . . . it can be bent, stamped, deep-drawn, punched or crimped without affecting either the vinyl or its bond. No special dies or drawing compounds are necessary and, since products are pre-finished, you enjoy substantial production line savings.

For consumers, Sullvyne-Clad slashes maintenance cost. The protective coating is ten times thicker than any conventional finish. It has unequalled abrasion resistance, resists corrosion and the effects of heat, light and weather.

And for your sales department, the rich decorative beauty of Sullvyne-Clad Metal Laminate on your product is an important market advantage. The limitless variety of patterns and colors offers finishes far superior to anything obtainable with ordinary paints, lacquers or enamels.

Wherever a metal product requires a decorative finish, wherever the impermanence of its present finish is causing maintenance expense or customer dissatisfaction, new Sullvyne-Clad Metal Laminate suggests itself as a highly improved basic material. Find out today how Sullvyne-Clad can facilitate your production and add to the salability of your product.

METAL LAMINATE DIVISION
O'SULLIVAN RUBBER CORP.
WINCHESTER, VA.
Makers of America's No. 1 Heel

higher-priced lines—though in its bargain basement a woman can still buy a pair of shoes for $1.99.

Does this foreshadow a change in the basic Ohrbach policy of low markups? This is the question that the trade raised last year when the move was announced. There were two separate problems:

Ohrbach's downtown store may have been inadequate, but it was a low-cost operation. Would the move to bigger quarters uptown increase costs?

How about Ohrbach's suppliers—would they balk at selling to Ohrbach's now that the store was coming into direct competition with uptown stores that are also customers of these same suppliers?

• **Basically Same**—The Ohrbachs insist that the new stress on higher-priced lines is definitely not a change in basic policy. To the question about suppliers, Jerome K. Ohrbach, president, answers an emphatic no. Ohrbach's is such a big buyer that no manufacturer wants to lose it as a customer, he says. Thanks partly to the general lack of firmness in the market in softgoods, the store has kept most of its old resources, added some fancy new ones.

That's one reason, the Ohrbachs say, why they can also answer no on the question of increased costs. In their eagerness to get or keep this big customer, the manufacturers offered Ohrbach's so good a price that the management thinks it might even be able to sell at a lower price than before.

Another reason is the much greater efficiency of the new store. The old Ohrbach's was a chopped-up series of departments, located in what was actually six buildings. It takes fewer supervisors to oversee operations in the open floor space of the new store. The old store had five receiving rooms, requiring eight managers. The new one has one highly mechanized receiving operation, requiring only three.

Jerry Ohrbach also points out that with double the floor space it used to have, Ohrbach's now has what it long needed: a big store.

• **Theme Song**—It's just here that the Ohrbachs harp back to their favorite theme: the continuing importance of the big-city market. The big store can offer the variety of style and price that the smaller suburban branches can't carry—one reason, says Jerry Ohrbach, that he and his father have gone slow on suburban stores. Sooner or later the customers find this out, Ohrbach thinks, and come back to the city.

Meditating on how Ohrbach's took over Milliron's in Los Angeles, another old department store in Newark, and now McCreery's, Jerry Ohrbach wonders: "Maybe our mission in life is to take over run-down department stores and bring them back to life."

What's so Attractive about a Plant Site in the Hampton Roads Port Area?

Much—if you serve extensive domestic and worldwide markets.

Functioning as *one* port unit, the Ports of Hampton Roads —Newport News, Norfolk, Portsmouth and South Norfolk —provide direct rail-to-ship service and many modern facilities which make for speed and economy in the assembly of raw materials . . . and fast and more profitable distribution of finished products to principal markets.

Nine major railroads; 273 steamship lines; nearly 300 wharves, piers and docks; 215 acres in warehouses and transit sheds; and many other diversified and special port features—plus the fact that the Hampton Roads Port Area is rich in business and industrial advantages . . . with plenty of dependable electricity available—make this area at the "TOP OF THE SOUTH" an ideal location.

For a complete answer to: "What's So Attractive About a Plant Site in the Hampton Roads Port Area?"—communicate with us for full, accurate and confidential information.

AREA DEVELOPMENT DEPARTMENT

VIRGINIA ELECTRIC AND POWER COMPANY

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Always SAFE!

AIR Parcel Post
flies with the Air Mail

SAFE AS CAN BE! Gets careful priority treatment all the way — may be Insured, Registered, sent C.O.D. or Special Delivery.

FAST AS CAN BE! Goes coast-to-coast overnight. Speedy overseas service, too, at reasonable rates.

CONVENIENCE PLUS! Prompt delivery *direct to the door.* No bothersome forms — no extra cost for enclosing a letter.

AIR PARCEL POST builds prestige -- customers appreciate this special attention.

For more information and rates, call your Post Office.

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AIR Parcel Post
and Air Mail

Advertisement by the Scheduled Airlines as a public service for the U.S. Post Office

MARKETING GIMMICKS

Niagara Falls will turn a brilliant red and spray forth a delicate scent for a few minutes one Saturday this November. That is, if Angelique & Co., of Wilton, Conn., gets permission to dump 400 lb. of chemical sea-marker dye and a quantity of its new Red Satin perfume over the American falls in a grandiose promotion stunt. (Angelique is the same firm that last year sprayed a perfumed fog over Paris.)

Call it silly, call it an example of American merchandising ingenuity, but more and more manufacturers, advertisers, and retailers are coming up with new promotion twists. This summer, with its red-hot competition, has been the summer of the marketing gimmicks. Here's a pot-pourri of some of the latest:

Air conditioning for your car while you eat in it is provided by Stuart's Drive Inn restaurant in Houston. Cold air is piped in through the windows, the warm air drawn out (picture, below).

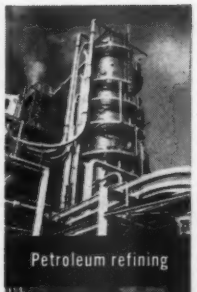
"Salethons"—24-hour warehouse sales marathons—are being tried out by George's Radio & Television chain in Washington, D. C. These start at 6 p.m. on a Saturday, feature hundreds of dollars worth of prizes and refreshments, prices that drop lower every hour. . . . The entire Cincinnati Music Hall was rented by Friedman Furniture Co. for a warehouse sale. . . . And Seattle's Bon Marche department store gave its customers free rides from its store to its warehouse in special shuttle buses during its last clearance sale.

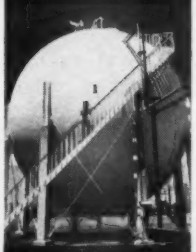
Auto dealers are in the forefront of the gimmick race. A Houston Studebaker dealer offered all-expense-paid vacation tours to St. Louis, Chicago, and South Bend. . . . With each purchase from a San Diego Ford dealer you get a $25 Savings Bond. . . . A Bronx, N. Y., dealer appeals to the women with offers of free mink stoles. . . . Louisville Pontiac, Chevrolet, and Ford dealers are vying with each other in offering such easy terms and high trade-in values over a 12-month period that you can almost "buy a 1954 and a 1955 model for the price of one."

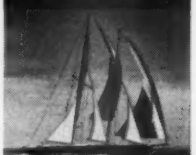
Giveaways have gone too far, some auto dealers feel. In Detroit, Grand River Chevrolet Co. recently ran a two-week "giveaway to end all giveaways" promotion, during which it offered free fur pieces, live ponies, pleasure boats, dining room suites, home workshops—all in all 58 gifts ranging up to more than $500-worth each—"to show how ridiculous this business can become." (But Grand River sold almost twice as many cars as usual that fortnight.) And in Toledo, the Rittenhouse DeSoto-Plymouth agency spoofed giveaways in an ad that promised everything from a three-month fishing trip to Peru with a blonde secretary for Dad to a trip to the French Riviera and a new living room suite for Mom and a 25-hp. outboard motor for the kids—the latter complete with "skin diving outfit and oxygen mask in case the boat sinks." All these gifts were offered "free"—providing the customer tacked an additional $7,000 onto the purchase price of his car.

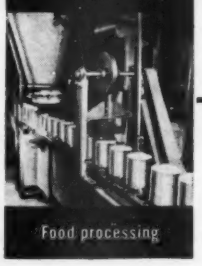
The "free" craze, in any case, has spread to many fields of retailing. Syracuse appliance stores are handing out gift certificates worth as much as $100 in goods along with purchases of items costing up to $300 list price. . . . Detroit's Highland Appliance Co. offers free power lawnmowers with a variety of items. . . . During a recent sale, Cleveland's Pick'n-Pay supermarket gave away $8,000 in prizes (from toys to major appliances) to customers who were checking out at the counter when a special bell rang. The customers also got real snowballs frozen and held over from last winter. . . . Ridge Lumber Co. in Rochester, N. Y., handed its customers $5-bills every half-hour one day. . . . Mizerany Bros. and Franklin Furniture Co. in St. Louis advertised five-day free vacations in New York (picture, below), and Gabberts of Minneapolis advertised three-day expense-paid sojourns to Chicago—all with purchases of appliances.

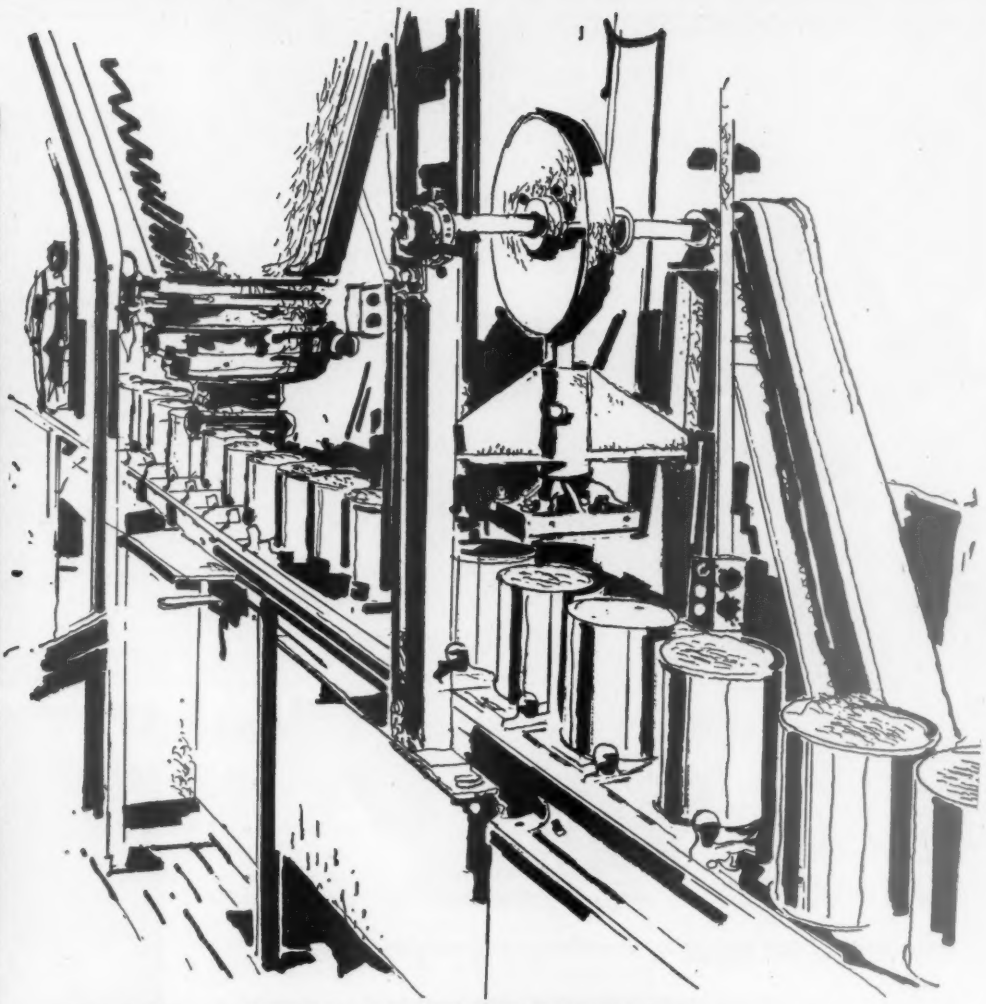
Downtown merchants have thought up new twists designed to lure customers











REM-CRU TITANIUM...

new key to industrial progress

—*In the FOOD PROCESSING Field*

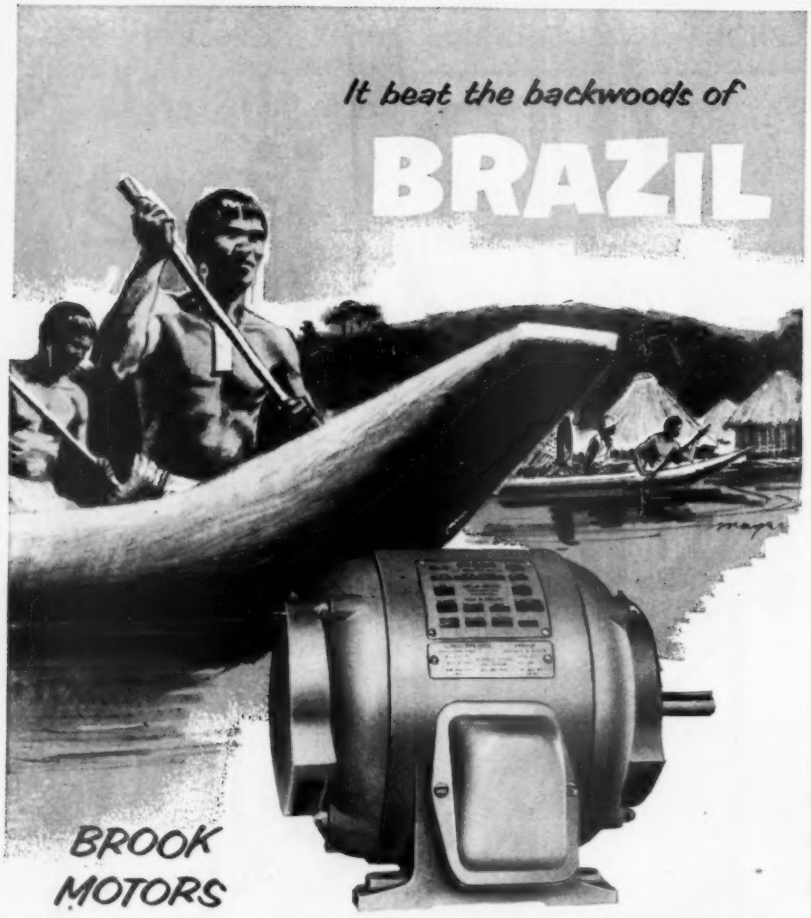
REM-CRU titanium's unequalled resistance to most forms of corrosion, its light weight and high strength, make it the new key to processing efficiency.

Titanium's absolute resistance to the attack of residual salt in sea water, for example, puts an end to corrosion damage in fish packing equipment. It's an equally good choice for agitator blades, packaging machine parts, equipment subjected to repeated cleaning with caustic chemicals—anywhere that severe corrosive conditions exist.

And expanded facilities at REM-CRU have released ample quantities of this new metal for nondefense use. Prompt delivery of REM-CRU titanium is assured . . . in bars, plates, sheet, strip, wire, tubing and forgings . . . in many sizes and grades . . . even in the new high-strength, weldable alloys.

So take advantage of titanium's many advantages . . . its tremendous resistance to most forms of corrosion . . . its light weight combined with exceptional strength . . . and its ability to be fabricated by normal shop practices. It will pay you to explore the possible uses of titanium in your plant. A REM-CRU engineer can help with practical, down-to-earth suggestions.

REM-CRU TITANIUM REM-CRU TITANIUM, INC., MIDLAND, PENNSYLVANIA



can meet all your operating requirements, too!

Wherever there's rough going—whether it's the most adverse climatic or temperature conditions, you can always count on Brook AC electric motors to give the most dependable service—anywhere in the world! Famous Brook motors are built with mica-insulated stator slots and windings that are impregnated and baked to resist the heat, cold, moisture and dust encountered in the U. S. and every foreign country. They're designed and precision built to meet or surpass NEMA standards. They use standard bearings, American threads and nuts. All major types are available from stock, in a wide range of horsepower sizes. Easily serviced in *any* shop . . . parts and motors quickly obtainable everywhere. Ideally suited for original equipment, as replacement motors, and for products destined for export to any country. Always insist on Brook . . . the world's *most respected* motor—built by the world's *most experienced* manufacturer.

1904-1954 . . . respected and used the world over for 50 years!

BROOK MOTOR CORPORATION
3555 W. Peterson Ave., Chicago 45, Illinois
Write for FREE catalog!

back from suburban shopping centers. In addition to giving them lots of bargains, free parking facilities, and bus rides to the urban stores, retailers in Detroit and Tacoma, Wash., handed out tickets good for free or reduced-price movies and lunches to the shoppers as they boarded the special buses (BW—Jun.5'54,p54).

Christmas gift liquor packaging (BW—Sept.4'54,p132) is rife with new ideas. National Distillers Corp. announced it will put its Old Crow bourbon into quart-size Royal Doulton Ceramic figurines, shaped in the likeness of the whiskey's emblem—a crow dressed in top-hat and tails, wearing pince-nez glasses.

To protect phonograph records from scratching each other's surfaces, RCA Victor has raised the center label and outer rim on its long-play and 45-rpm. records.

Color slides shown via an automatic projector machine plug the latest "new look" Paris fashions (BW—Aug.28'54, p30) (picture, below). The projector is given out by Christian Dior Hosiery Co. to stores for counter displays.

Photos by the pound are featured by a Maine portrait studio, where pictures of each member of the family cost 1¢ per lb. the subject weighs.

A champagne party was thrown for customers on its mailing list by Magnin & Co., West Coast women's specialty chain, when it opened a new shop in Seattle last month. But since the party was sponsored by a charity organization, the revelers paid $3 a head to attend.

Salesman's Confidential Manual put out by the I Want To Know Publications, Inc., for $25 per copy—is a pocket-size yearbook listing pertinent information on brand-name appliance prices, specifications, and model numbers.

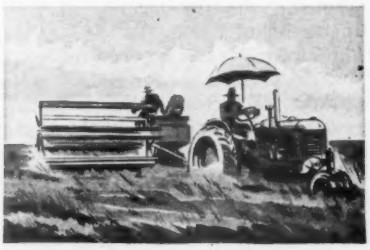
The rash and rage of gimmicks this summer brought forth a dissenting warning to retailers from market researcher A. C. Nielsen. He cautioned that "frequent and successive use of deals and offers can destroy your price structure."

Whoever You Are . . . Whatever Your Business . . . An R/M *Product Touches Your Life*

HOW TO UNROLL A MODERN MAGIC CARPET—WITH R/M BRAKE BLOCKS

Up hill and down, through town and open country, magic carpets of smooth highways unroll across our land. R/M Brake Blocks and Clutch Facings help build these fabulous roadways. For it takes a lot of digging to build a superhighway —or a dam, or a bridge, or a skyscraper. And without trustworthy friction parts, huge earthmovers and haulers and hoists would be helpless. This is why engineers everywhere specify Raybestos-Manhattan heavy duty Brake Blocks and Clutch Facings for original equipment and replacement needs on power shovels, bulldozers, trucks, cranes and tractors. Experience tells them that R/M products are safest, longest lasting, least costly in the long run. But developing these renowned friction materials is only one of R/M's specialized skills. Throughout industry and in your home, your life is touched by hundreds of products made in R/M's seven great plants and laboratories. If you have problems involving asbestos, rubber, engineered plastic or sintered metal products, call in an R/M representative.

Known the world over for the excellence of its products, R/M supplies more brake lining, clutch facings and automatic transmission friction parts than any other manufacturer. Bus and truck operators, and repairmen and dealers, as well as millions of motorists, rely on these R/M products.



Millions of farmers who operate mechanized equipment depend on R/M products—and their confidence is shared by manufacturers of the equipment and those who sell and maintain it. That's why so many farm tractors, trucks, and cars have R/M brake linings and clutch facings.

World's largest supplier of brake blocks, brake linings, clutch facings and automatic transmission friction parts for automotive and industrial use, R/M keeps miles ahead of every development. You'll find R/M products in use wherever safe, smooth, sure starts and stops are essential.

Fan Belts and Radiator Hose

Mechanical Packings and Gaskets

Abrasive and Diamond Wheels

Conveyor Belts

Industrial Drive Belts

Rubber Lined and Covered Equipment

Asbestos Textiles

RAYBESTOS-MANHATTAN, INC.

PASSAIC, NEW JERSEY

Raybestos ... *Condor* · MANHATTAN ... Grey-Rock

SPECIALISTS IN ASBESTOS, RUBBER, SINTERED METAL, ENGINEERED PLASTICS

R/M

Other R/M Products:
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Factories:
Passaic, N.J. • Bridgeport, Conn.
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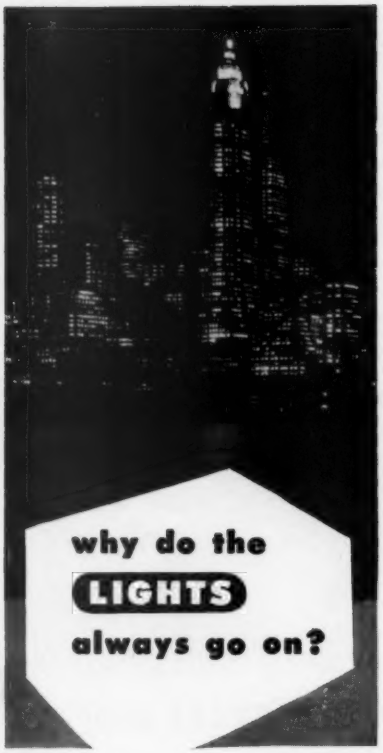
Crawfordsville, Ind. • Neenah, Wis.
Peterborough, Ontario, Canada



● You flip a switch—lights go on. You expected that. The real reason they go on, however, is because power men *expect* generating equipment to fail. They work, then, to prevent failure. Their success in stopping failure BEFORE it happens is often due to inspection with methods by Magnaflux.

Inspection with Magnaflux* detects defects and makes invisible cracks visible. Low cost and non-destructive inspection methods by Magnaflux are used on nearly every material in most industries for all kinds of maintenance inspection.

Also used as a production tool, Magnaflux is helping hundreds of manufacturers make better products at lower cost.

All of the facts about Magnaflux are included in an interesting brochure "Seeing Isn't Always Believing." Copies are available on request.

*Magnaflux is a registered trademark of the Magnaflux Corporation.

MAGNAFLUX

DETECTS DEFECTS

MAGNAFLUX CORPORATION
7306 W. Lawrence Avenue, Chicago 31, Illinois
New York 36 • Pittsburgh 36 • Cleveland 15
Detroit 11 • Dallas 19 • Los Angeles 58

Supers Rack Up a 15% Gain

Super Market Institute reports that supers continue their big dollar volume gains . . . What consumers like—and don't like . . . Setting prices on used TV sets . . . What's happening to self-service overseas . . . Katz's biggest drugstore.

More food sold, more nonfood sold, stiffer competition—that's the picture of the supermarket in 1953, according to Super Market Institute's 1954 annual survey, just released.

During 1953, the 396 member companies reporting, representing some 3,500 stores, had average tonnage sales gains of 15%, close to 1950's big 16% increase. Because food prices were down a bit, this brought a dollar gain of 13%, a shade below 1952's 14% increase. Average sale per store, though, was the best in four years: $1,150,000.

The smallest stores, those doing a business up to $1-million, had the best dollar gain: 18%, against 11% for those in the group selling more than $40-million.

• **Margins Up**—More companies had higher gross margins; 65% did better on that score last year, whereas only 47% improved during 1952. Net profit ratios after taxes were up for 49% of the companies, despite rising costs.

The score of 45% planning to expand was about even with 1952's record. This year, 56% of the companies plan to open new supers or remodel old ones—a trend that is particularly noticeable in the larger concerns.

Changing buying habits dictate changing selling habits. In 1953, 46% of the supermarkets were open for business every evening; a year earlier, only 33% were. An increase in Sunday openings was especially marked in the western areas.

• **Service**—Self-service continued its steady climb; more than one-third of the stores were completely self-service in 1953, compared with 28% in 1952.

A slight dropoff in the number of supermarkets that carry beer, wine, and liquor showed up during 1953. Here's the story:

	1952 % of Stores Carrying	1953
Beer	45%	42%
Wine	28	26
Liquor	10	8

In most nonfood lines, though, there was steady growth. More stores carried nylon hose, stationery, children's records, toys, hardware than in 1952. Some 73% of the supers have children's records, toys, hardware than in 1952. Some 73% of the supers have children's books. Underwear slipped slightly—19% of the stores sold it in 1952, only 16% in 1953—but electrical appliances jumped surprisingly from 9% to 15%.

Competition spurs the use of trading stamps. Some 15% of the companies offer this kind of sales incentive; 17% had regular premium plans. Significantly, among the 60 companies using stamps, 45% of them have tried it less than a year.

●

Du Pont People Like

Ranch-type house: 68% voted for this, preferably in brick
Solid colors: Plain sport shirt got 52% vote
Loafers: In leisure shoes, these got top score (42%)
Two-pant suits: Three times as many men want two as want one
Painted walls: Top choice (44%)
Separate dining room: 59% like a room to eat in
Console TV: Got better than 50% score
Two-toned auto: Overwhelming choice in styling

They Don't Like

Two-story house: Only 4% liked it best
Men's garters: Only 3% want them
Short hemlines: Women gave these a scant 2% O.K.
Homburg hat: Attracted less than 6% of the men
Attics: Lost out to ground-floor storage

They Split About Even on

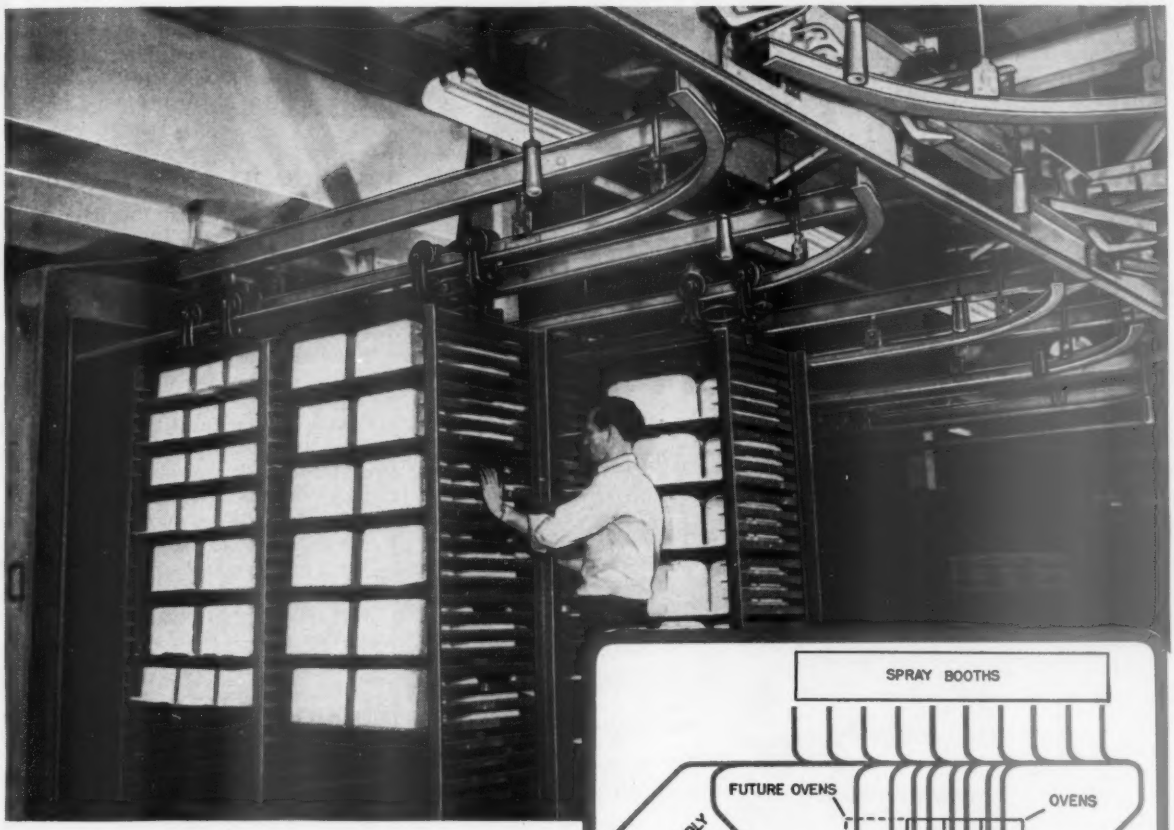
Wall to wall carpet vs. rugs
Plain and figured neckties
Light and dark furniture finish
Bare heads vs. hats for men

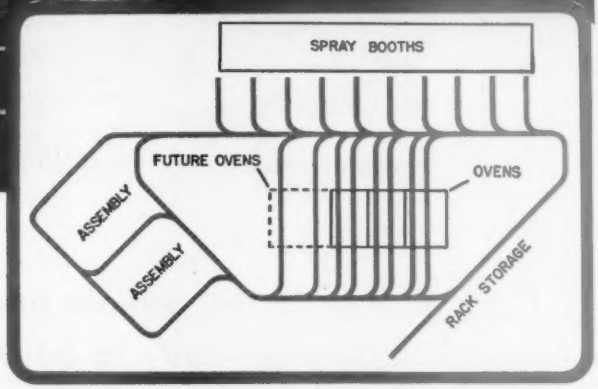
Consumer's Jumpy Pulse

The experts are putting a lot of money nowadays into finding out what that unpredictable entity, the consumer, likes. E. I. du Pont de Nemours & Co. did it the simple way. Better Living, its employees magazine, went to du Pont employees and asked them. It polled some 2,000 workers and their families in four different plants and states. The table, left, shows some of the findings.

Some were about what you would expect: the preference for the one-story house against the two-story house, the popularity of loafers for men's leisure shoes. But some are surprising. In a day of small houses and open-floor plans, 59% of the people surveyed want a separate dining room. At a time when small TV sets are the rage, more than half prefer consoles. When sport

Handling a broad range of shapes and sizes?





Louden engineered systems have the answer for that too!

The installation shown above is one of the answers Louden *engineered* overhead handling systems have for all handling problems. Here, a big enameling and japanning plant finishes everything from small parts to desks and cabinets. Louden monorail and man-powered conveyor racks handle work from dipping vats into baking furnaces on into storage. No unloading. No rehandling. No delays. No floor maintenance. Manpower and handling costs are cut, operations are accelerated.

You will find the lowest-cost, most efficient, most economical solution to your handling problems when you take advantage of Louden's long experience and competent engineering advice.

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4109 Broadway, Fairfield, Iowa
A Subsidiary of Mechanical Handling Systems, Inc.

SEND FOR THIS BOOK— Write for your copy of "Economical Material Handling" . . . full of time-saving, cost-cutting ideas and case histories. Free . . . no obligation.

Louden
MONORAIL & CRANES

Since 1867—the first name in materials handling

SOME LIKE IT HOT!

SOME LIKE IT COLD!

They all look in the 'yellow pages' when they're ready to buy!

ALL?—well, almost all. To be exact about it, surveys show that 9 out of 10 people who are ready to buy something (and want to find who sells it) just naturally turn to the 'yellow pages.'

That's why Honeywell, International Harvester and so many, many more makers of nationally advertised products find Trade Mark Service in the 'yellow pages' of telephone directories so valuable. You can buy Trade Mark Service *nationally* to reach some forty million homes, offices and factories—or you can buy it in key markets.

Call a Trade Mark Service representative at your local telephone business office. He'll show you how the 'yellow pages' can help make advertising work harder by making it easier for prospects to find your dealers.

For more information on "Telephone Directories" see Standard Rate and Data (Consumer Edition).

shirts are bursting into all sorts of vivid bloom, solid colors got top choice, with plaids next.

It's hard to draw a moral—except that the mass market apparently knows its own mind.

For the appliance manufacturer there's a special tip. More people—28%—said they wanted air conditioners than anything else; freezers rated second, with a 23% vote.

Guide to TV Trade-Ins

New evidence that the trade-in has a growing place in TV merchandising is the first edition of the TV Trade-in Guide, published by Nelda Publications, New York. It contains prices and specifications for receivers manufactured since 1946.

In arriving at the trade-in value of an old set, Nelda took a variety of factors into consideration: the original list price, the model year, screen size, type of furniture. It checked its finding with both manufacturers and retailers.

Nelda expects to make this an annual event—just as its Standard Refrigerator Trade-in Manual has been an annual event for over 20 years. The TV guide sells at $15 a copy, with a special introductory offer of $10.

Souped-Up Super Store

Katz Drug Co., Kansas City drugstore chain, never did believe in doing things by halves. Four years ago when it opened a superduper store in its home town, it called it the biggest drug store in the world (BW—Jan.28'50,p52). Last week, it opened another, even more super, in Memphis, Tenn. This one is the biggest yet, with 35,200 sq. ft. of floor space. It is the 33rd store in the Katz chain.

The Katz brothers call it a drug store. It stocks 31,000 different items, including cameras up to $500 and a parrot in their pet shop with a $700 tag on it. Among its 35 departments are a complete line of sporting goods, men's furnishings, electrical goods.

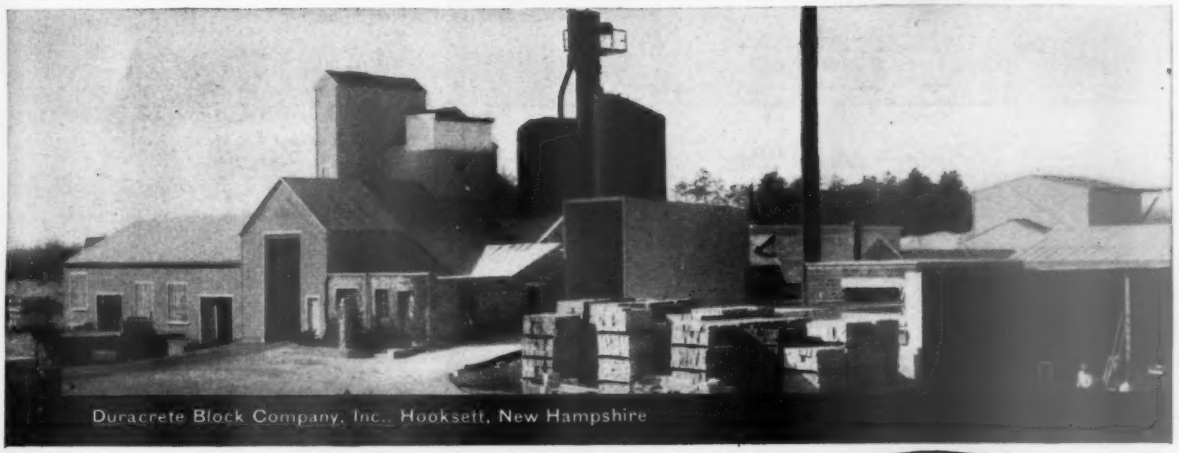
Katz has further plans for a southern invasion. The next store on its docket, though, is another super duper in Kirkwood, near St. Louis.

Self-Service Abroad

Seventeen men—overseas representatives of National Cash Register Co.—from 13 foreign countries wound up a five-city tour of U.S. self-service stores last week. Their object: to take the lessons they learned back to their home countries.

Summing up their problems, after a

How a KEWANEE Reserve Plus Rated boiler...


Duracrete Block Company, Inc., Hooksett, New Hampshire

■ Anyone would find it difficult to prove to Dante V. Donati, Manchester, New Hampshire, that Kewanee Reserve Plus Rated Boilers do not pay dividends. That's because he discovered it the hard way. First, he bought an ordinary boiler for his plant at the Duracrete Block Company. He operated it one year, and then . . . but let him tell the story—

"We installed an ordinary boiler and found it to be inadequate. We then purchased a Kewanee Unit. Our production was stepped up more than 100% . . . with fuel costs cut in half. Maintenance cost is extremely low. The quality of our product has improved because of lower moisture content due to ample steam for processing."

Judging from Mr. Donati's experience it just makes sense that it's money in the bank to follow the Kewanee Reserve Plus Rating Plan in selecting a boiler. So when you choose a boiler, know these important facts:

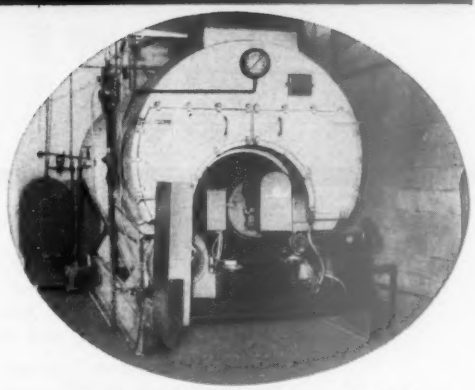
1—*Boiler rating must be based on nominal capacity, not maximum capacity;*

2—*Boilers must have sufficient built-in reserve to meet changing demands;*

3—*Boilers must have sufficient capacity to operate at "cruising speed," not maximum speed at all times;*

4—*Like examples must be considered in comparing boilers. Don't be confused by vague technical claims.*

Choose Kewanee and cut fuel costs—lower maintenance—reduce breakdowns —get longer boiler life.



Here is No. 85-60 Kewanee Oil Fired Boiler-Burner Unit installed at the Duracrete Block Company.

KEWANEE BOILERS
KEWANEE-ROSS CORPORATION, Kewanee, Illinois
Division of American Radiator & Standard Sanitary Corporation
Serving home and industry · American-Standard · American Blower
Church Seats & Wall Tile · Detroit Controls · Kewanee Boilers
Ross Exchangers · Sunbeam Air Conditioners
YOU can depend on KEWANEE engineering

WITH A KIDDE CO_2 SYSTEM!

Let fire get a foothold, and a going concern is *gone*. Don't risk it. Install a Kidde Automatic CO_2 Fire Extinguishing System, and fire won't stand a chance.

A Kidde System goes into action at the first sign of fire —releases clouds of CO_2 over the blaze, smothers fire almost as soon as it starts. And CO_2 leaves no mess to clean up later. It puts out the fire, then vanishes.

Protect flammable liquids, dip tanks, spray booths with a Kidde System. Let Kidde guard record vaults, machinery and electrical equipment.

And for on-the-spot protection, get Kidde portables. When fire strikes, just aim the horn, pull the trigger, and *swoosh!* No more fire.

Don't wait 'til your business is a cinder pile—Contact Kidde today.

Kidde

The words 'Kidde', 'Lux', 'Lux-O-Matic', 'Fyre-Freez' and the Kidde seal are trademarks of Walter Kidde & Company, Inc.

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climactic tour of the New York Metropolitan area, some of the visitors had this to say:

From Johannesburg: This city has at least one self-service store. Problem: to get the natives to understand they could pick up and feel the merchandise they were buying.

From Cairo: Egypt's first self-service operation opened in this city this month. Egypt's market has this difference: Egyptian women stay home; it's the servants who do the family marketing—and the servants are men.

From Paris: Little family stores abound in France. The young people like self-service, but the old folk like the friendly shopping chores.

From Hong Kong: In this crowded city, there's small space for giant supermarkets. Visitor Arthur Lum will try to teach the merchants that self-service can work in small stores, too. But Hong Kong has a lot to learn about prepackaging.

From Amsterdam: As in most European countries, the small shop dominates. Besides, the Netherlands housewife does much of her shopping from door-to-door carts. Switching her habits will be a tough proposition.

MARKETING BRIEFS

Quality Radio Group, Inc.—an association of radio stations organized to tape better-grade shows to fill in open network time (BW—Jul.17'54,p102)—has taken out incorporation papers. The group will eventually include 36 stations, will sell taped programs in a package to national advertisers.

•

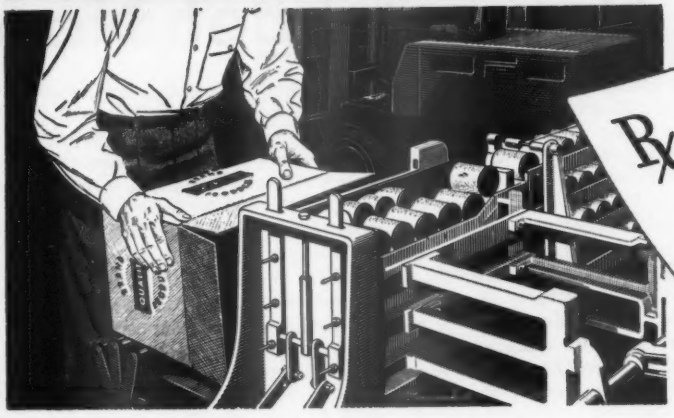
Another premium gas: Standard Oil of Ohio will widen distribution of its new premium gas, Boron Supreme, encouraged by strong sales in the Cleveland area. The new gas, which will eventually replace the current Sohio Supreme brand, uses aviation-gas additives, sells for the regular Sohio premium price (29.9¢ per gal.). The company claims its new brand gives up to 16 mi. per tankful over other premium fuels.

•

Advertising allowances aren't really "available" to stores unless the stores know about them. So FTC found, in upholding its hearing examiner's ruling that all customers must get a fair crack at manufacturer's ad allowances. In the case of two apparel makers, FTC noted that Macy's had not been told of the allowances while some other stores got them. The whole question of promotional and advertising allowances has been under continuing study at FTC for some time.

Rx Gaylord Boxes for printed salesmanship

Rx Gaylord Boxes for product protection



Rx Gaylord Boxes for packing efficiency

Gaylord Prescribes the Right Container for Your Product

Gaylord Boxes

When it comes to shipping, every product is unique unto itself. Every product needs containers that are prescribed to match its individual characteristics. See Gaylord for the right container prescription — for boxes that protect products, sell brands, promote packing efficiency.

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SALES OFFICES COAST-TO-COAST

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

Is YOUR Plant Protected?

Keep out vandals, thieves and trouble-makers with an Anchor Fence. An Anchor Chain Link Fence . . . the fence with zinc coating applied after weaving — not before . . . assures protection, day in, day out. An Anchor Fence set with deep driven "drive anchors" remains erect. Makes additional space available for outdoor storage. Needs little maintenance. Get details. Write for free "Industrial Fence Catalog." Address: ANCHOR POST PRODUCTS, INC., Industrial Fence Division, 6969 Eastern Ave., Baltimore 24, Md.

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Conduct your business while relaxing on the Pacific's own air-conditioned super luxury liners! Radio communication with your office. News reports, stock quotations, typewriters available. If pressed for time, ask about sea-air combinations.

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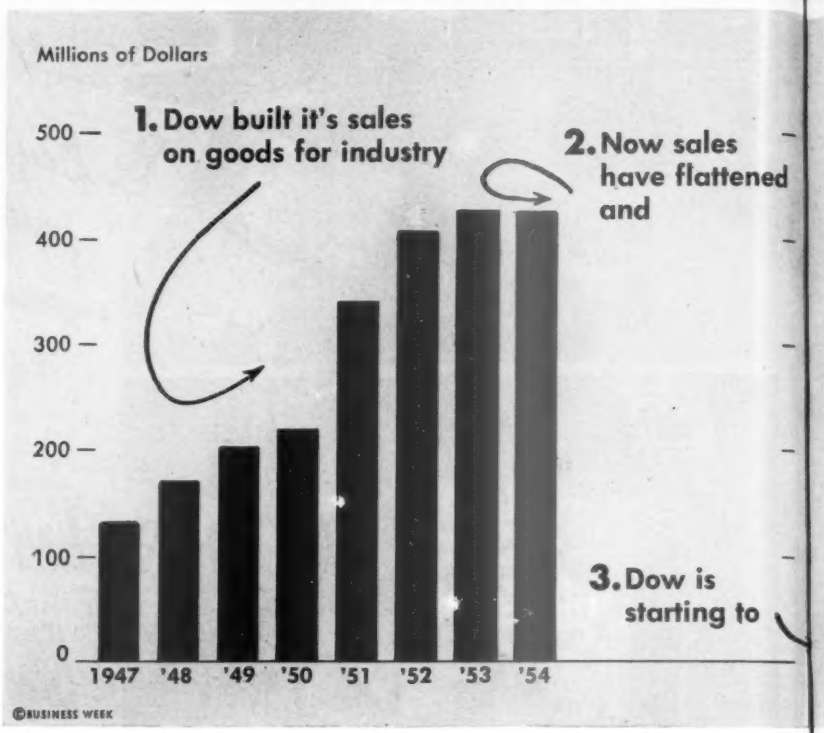


Dow's Target Now: M

Early this spring, Dow Chemical Co. faced up to a flattening sales picture (chart, above).

Last Monday, television viewers saw a new, well-heralded documentary show.

There's a tight connection between the current status of Dow's sales and Medic, the show telecast over the NBC network. Medic's sponsor is Dow Chemical; and the product it plugs is Saran Wrap—a plastic material used to wrap foods in, and Dow's first product sold to consumers under the company's own label.

• **Launching a Name**—The promotion of Saran Wrap, however, means more than just another consumer product. Saran Wrap is as good an example as you'll find of what management can do when its capital expansion program outruns its market. The Midland, Mich., company is facing the grim fact that—like many other companies—it is overbuilt for today's demands.

"We are not utilizing our full capacity," Dr. Leland I. Doan, president, told the annual stockholders meeting last month. "And when you are not producing and selling up to capacity, your earnings are hurt."

That's why Dow wants the mass market to hear about Saran Wrap and get used to seeing the Dow name on supermarket shelves. And it's the reason Dow has hooked up with Medic, perhaps the strongest medicine to hit TV since its own prototype, Dragnet. (This week's show followed a prospective mother, doomed by leukemia, through death and a posthumous delivery. NBC is counting on such heart-winning scenes to outpull I Love Lucy, Medic's opposite number on CBS).

• **Proof**—Doan's reasoning is backed by facts and figures. In seven years, Dow's investment in property has tripled; sales have a little more than tripled. But sales began to level in 1952, and in 1954 (Dow's fiscal year ended May 31) they dropped $2-million, to $428-million. Net income suffered more. It dropped from $35.9-million in 1953 to $33.4-million this year.

According to Doan: "Our business requires a very high capital investment. This makes it harder for new competition from outside, but it makes our problem one of getting a higher return on investment."

Dow's management is attacking the problem three ways:

Switch in emphasis. Dow is turning down one spigot of capital expansion and opening wide another. Up to now its biggest expansion has been to get more power and more production ca-

4. Sell to Consumers. That's the purpose of Dow's new TV show, Medic. It will plug Saran Wrap

ow: Millions of Buyers

pacity for basic chemicals. For the next couple of years it will emphasize research and construction of pilot plants.

New sales approach. This follows logically the changed emphasis on expansion. Saran Wrap won't be the only consumer product under the Dow label. The purpose of the research and the pilot plant program is to find new products and ways to produce them efficiently and economically.

Cost cutting. This also ties in with the research effort, because another of its aims will be to improve existing manufacturing processes. Cost cutting, though, will run throughout the company, but in what management thinks is a practical manner.

"It is entirely possible to let yourself be carried away," Doan says. "It would be easy to 'save' a lot of dollars —millions of them—by slashing our advertising budget, by reducing our research effort, by letting maintenance slip. But over the long pull, where would be the customers we have been acquiring? Where would be the new products we must have to maintain our position and growth?"

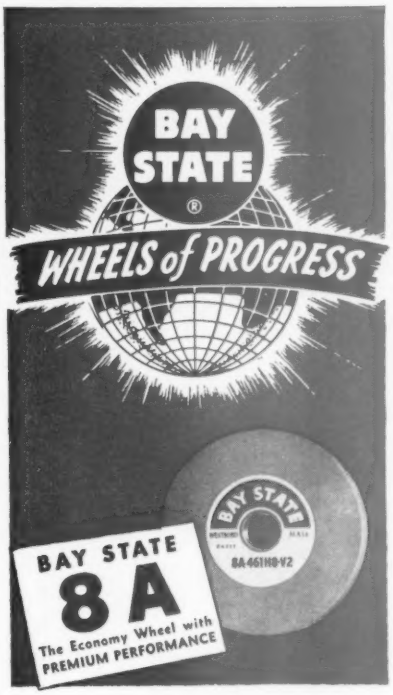
• **Trimming the Costs**—Doan's idea of cost cutting is good housekeeping. "You can get overly proud of your plants," he says, "so Dow is saving on small things. Janitors shouldn't make special rounds to empty ashtrays; a fence can be painted once a year instead of twice; the plant orchestra and chorus (on which the company has been spending $40,000 to $50,000 a year) won't make so many trips."

But Dow, loaded with working capital ($150-million last May 31), is saving in large chunks, too. Next month it will retire its preferred stock at a cost of more than $32-million. It's a good time to retire it, explains Doan. It costs the company $1.2-million a year in dividends. Last May, Dow paid off $50-million of $100-million in bank debt, with a large saving in interest costs.

• **40-Year Race**—The cost cutting program, however, is more a sign of the times than a solution to Dow's problem of coaxing more dollars of profit out of its plant. The frontal attack is the switch in emphasis in capital expansion.

Dow grew through the efforts of founder Herbert H. Dow to break away from the accepted thinking of his day that a small chemical company should stick to its basic products: in Dow's case, bromine and chlorine. And the company, like many others, has been following its founder's teachings for more over 40 years.

It has been a constant race between



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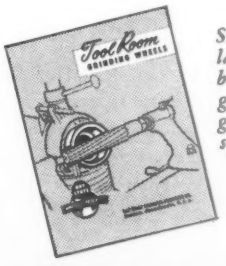

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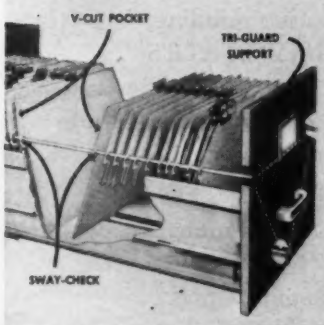
Within this innocent looking file are two revolutionary ideas!



GLOBE-WERNICKE EXCLUSIVE TRI-GUARD FILING PRINCIPLE This principle has revolutionized the entire field of filing equipment. Tri-guard cuts filing expense because it makes filing and finding much faster; files can't slump or sag.

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Engineering Specialists in Office Equipment, Systems and Visible Records

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"... now the company again has paused for breath ..."

DOW starts on p. 114

production facilities and new products, and every once in a while Dow has been brought up short in its capital expansion by the need to expand its product line. Annual capital expenditure trailed off from 1947 through 1950. Then, partly due to the Korean War, partly to the chemical industry's amazing growth (BW–Sep.4'54,p91), Dow revved up again, and between 1950 and the end of its fiscal year in May it averaged better than $90-million a year in capital outlay.

Significantly, though, Dow capital expenditures turned down in the 1953 fiscal year, the same year in which the sales curve began to flatten. In the 1952 fiscal, Dow spent $154-million; in 1953, $94-million; last year, $59-million. This year Doan expects his company to spend approximately $50-million.

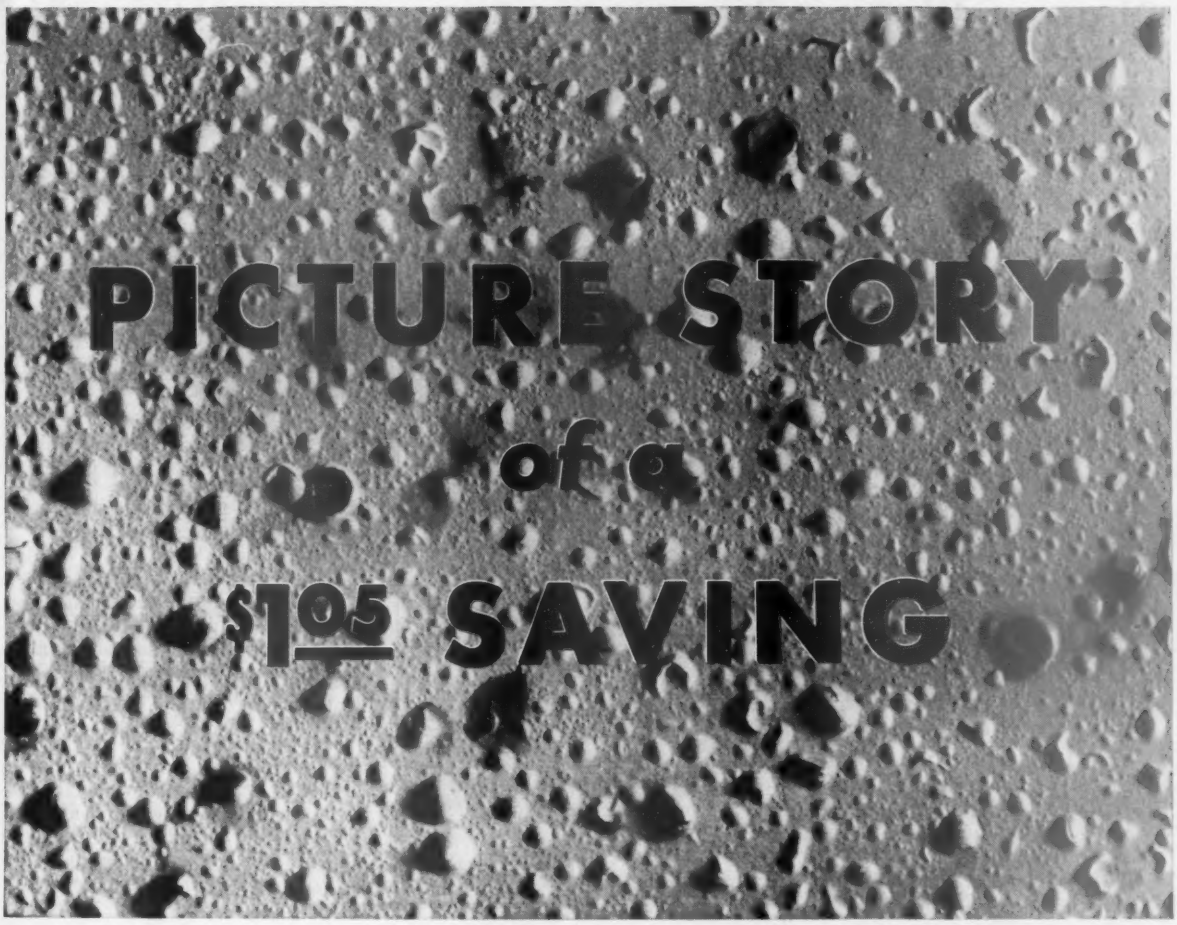
• **Second Wind**—In this rush for additional basic production resources, Dow has increased its power facilities (25% at Midland, 10% in Texas last year alone), built plants for soda ash and glycerine (two products it had not previously made), expanded capacity for latex, magnesium, saran, and many other chemicals, including agricultural chemicals and pharmaceuticals.

Now the company again has paused for breath, but this pause is possibly more meaningful than the past drop in facilities expansion. Doan is under unusual pressure to increase sales and earnings.

• **More Sales Needed**—The pressure comes from the circumstances of Dow's expansion. Much of it was certified for accelerated amortization as defense construction. Any future expansion will be under the new tax law, which provides a modified form of fast amortization. So Dow presently is writing off plants at a $64-million-a-year clip, and Doan expects this to go up to $75-million in the present fiscal year. He says that with this high amortization rate, Dow is "financing plants which we can expect to earn profits for us tomorrow."

Doan concedes, however, that the big annual write-off will drag down profits and dividends paid out, unless sales are sharply boosted: Hence the warming up of research and sales and the big try for consumer lines.

• **Coming Up**—Dow now operates 59 pilot plants—21 for process improvement, 27 for products new to the company, and 11 for products new to the industry. Last fiscal year, research facilities were expanded by more than 120,000 sq. ft. and 33,000 sq. ft. additional are under construction. New



On a 500 gallon paint order a price differential of $1.05 per gallon amounts to quite a tidy saving.

Or does it?

To buy protective coatings primarily on price is about as safe as walking through a reptile farm in your bare feet. You may get through, but the chances are that somewhere on the way you're going to get bitten.

We make Tygon Paint. We have for over fifteen years. It costs a few pennies more to buy *in the can.* It costs a lot less on the job. You'll find it real hard to buy "protection by the year" at a cost anywhere near as low as you'll pay for Tygon protection.

Tygon Paint is pure Tygon plastic in a solvent vehicle. It's applied cold by spray gun or brush, preferably over Tygorust Primer. It air dries quickly to form a tough, flexible, impact-resistant plastic film. Tygon Paint possesses excellent resistance to acids and alkalies, and to oils and water.

Tygon is not a "universal" coating. For some applications it is not at all suitable. For others it may offer only limited protection. But for the big majority of corrosion-resistant applications you'll find Tygon Paint your best, your safest, and, in the long run, your most economical buy.

WRITE FOR THIS FREE BOOKLET

Bulletin 750 tells you where and how you can use Tygon Paint to solve your corrosion problems. It's free, on request. Address: The U. S. Stoneware Co., Plastics and Synthetics Division, Akron 9, Ohio.

U. S. STONEWARE

AKRON 9, OHIO

468D

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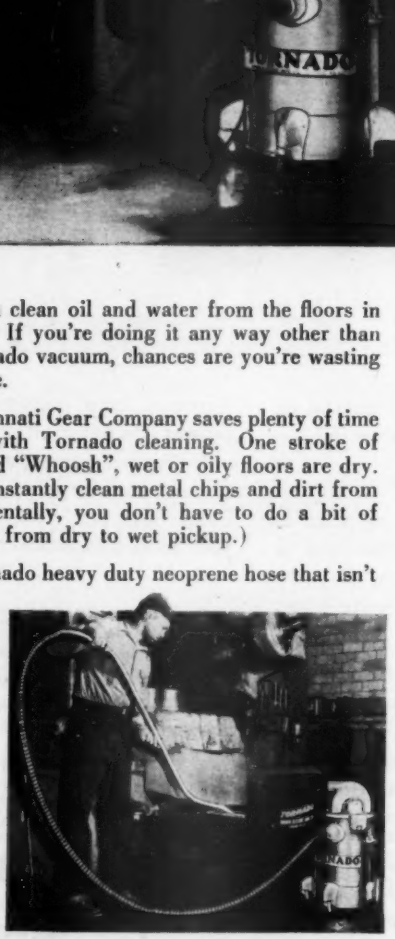
How do you clean oil and water from the floors in your shop? If you're doing it any way other than with a Tornado vacuum, chances are you're wasting a lot of time.

The Cincinnati Gear Company saves plenty of time and labor with Tornado cleaning. One stroke of Tornado's 300 m.p.h. suction and "Whoosh", wet or oily floors are dry. Then, with their Tornado, they instantly clean metal chips and dirt from machinery and fixtures. (Incidentally, you don't have to do a bit of "conversion" to change Tornado from dry to wet pickup.)

What's more, they use the Tornado heavy duty neoprene hose that isn't affected by oil and stands up under the most severe abuse.

Find out how Tornado cleaning can improve and speed up your plant cleaning operations.

We'll be glad to send a Tornado Demonstration Team to your plant. Just tell us the time and place.



Write for Tornado Industrial Cleaning Bulletin #600.

BREUER ELECTRIC MFG. CO

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pilot plants will be built. Doan won't say how many or for what. It doesn't want to tip off the competition.

L. C. Chamberlain, assistant to the research director, does highlight some avenues the company is exploring, however. Amongst them: saran pipe; improved, light-stable Styron (Dow's name for its styrene derivatives); magnesium alloys; water softener resins; blycol; higher-strength polyvinyl chloride; noninflammable, flexible styrofoan, for which Dow sees wide use in construction.

• **Plastics Pattern**—If much of the product development seems concentrated in plastics here's the reason. In 1947, Dow's first big postwar expansion year, plastics accounted for 15% of the company's sales; in the past fiscal year, plastics made up 32% of sales revenue. As it puts more drive into plastics, Dow will several times again be confronted with the situation it faced with Saran Wrap.

The company has been making saran film—the base material for Saran Wrap—since World War II. The product moved into the postwar world as a wrap for package foods. Next was the home market. Dow could have followed its historic pattern of supplying the film to converters who would package and market it, but as Doan says: "We were in a better position to manufacture it, and in a better position to sell it. We've been putting a lot of steam behind it, and we are going to put even more."

• **More Tiers**—Penetrating the consumer market directly has meant changes at Dow, both internally and externally. "We had to do a selling job inside," says sales vice-president Donald Williams.

Dow has been close to the consumer market for years, supplying ethylene glycol antifreeze to petroleum marketers, but never directly in the market. It meant a change in advertising, both in type and size of appropriations. Dow has dabbled in TV as a participating sponsor, but Medic is its first full-sponsor show. It also meant a change in Dow's sales setup: For the first time there are additional sales tiers moving the company's products—the wholesalers and retailers. Along with this, the company is opening three new branch sales offices.

• **Transient**—Eventually, if Dow is successful in bending its sales curve upward once more, it will go back to basic facilities expansion. Doan hopes that in a couple of years the company will be averaging about $100-million annually in capital expenditures. "In an industry that has been growing as fast as chemicals," he told stockholders, "it is a little like buying your winter's fuel in the summer. You don't need it then, but you know you will."

More Psychology...

. . . in industry is the object as consultants band together to improve services and bolster their reputation.

At the American Psychological Assn.'s annual meeting in New York last week, five psychological consulting companies announced they had formed a nonprofit association of their own, called National Psychological Consultants to Management, Inc. Its purposes: to improve consulting services by providing a clearinghouse for industrywide problems, and to improve the reputation of industrial psychology, a field still viewed with skepticism by many executives.

Representation in the new association is countrywide, and includes William, Lynde, & Williams of Cleveland; Humber, Mundie & McClary of Milwaukee; Edward Glaser & Associates of Los Angeles; and two New York outfits, John R. Martin Associates and Nordli, Ogan, Wilson Associates.

Main office of the new organization, which named Dr. W. H. E. Geiger, president, will be in Painesville, Ohio. Dr. Geiger is with William, Lynde, & Williams.

• **Yardsticks**—Each of the member firms will contribute to the parent's research projects, which, among other things, will be directed at discovering new testing techniques. Some of the fields to be studied: communications, motivations, group thinking, and creativity tests.

All five consulting companies now tackle the problems of organizational neurosis in much the same manner. A consultant first spends a couple of hours with a company president, tries to find out what makes him tick, how he fits into his own company. Very often, psychologists say, a company's morale problem begins at the top of the management ladder. The consultant later writes an analysis of the top man, and passes it back to him for inspection.

• **Rx for Morale**—If the top man gets a clean neuro-socio-economic bill of health, the consultant moves down the management ladder until he finds what makes the company zig when it should zag, or tock when it should tick.

The consultant will even help with the repair work, by tipping off executives on how to treat subordinates or by helping management put the right man into the right slot.

The industrial psychologists say their services are being accepted by management more widely than ever before. Together, they now serve 171 companies.

Both had problems—
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As far back as 1875, YALE answered management's needs with mechanized handling equipment to save time, manpower and money.

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UNITED STATES STEEL

Pineapple-Can Nuptials In Hawaii Dissolving

American Can Co. and Hawaiian Pineapple Co. (Dole brand) have lived off each other, side by side, for years. Now there has apparently been a parting of the ways. Two things happened:

George C. Stolk, Canco president, announced on a trip to Honolulu that his company was setting up a wholly-owned subsidiary, the American Can Co. of Hawaii, for its island business.

Hawaiian Pineapple on the same day said it was going to build its own $3-million can manufacturing plant. The plant when completed will supply all of its 300-million cans a year.

Stolk insists that the two events aren't related. He said the decision to change the organization in Hawaii was part of Canco's "over-all policy of decentralization."

Canco's Hawaiian business, all for the pineapple pack, amounts to about $26-million. Hawaiian Pineapple Co. accounts for about a third of that. Canco's plant adjoins Hapco's, feeds cans directly into it by conveyor belt.

This close tie apparently will end with Hapco's new plant. Trade sources say Hapco and Canco have been at odds for years over prices.

MANAGEMENT BRIEFS

Countertrend. Several companies, including General Foods, have been moving out of Manhattan to the suburbs. Last week two companies announced they were moving into Manhattan. Colgate-Palmolive Co., with four offices in Jersey City, has leased eight floors for its headquarters in 25-story skyscraper under construction at 300 Park Ave. In Yonkers, N. Y., Alexander Smith announced it was moving headquarters to mid-Manhattan.

●

Vice-presidents in the radio-television industry are legion. Last week NBC added another, the third one of the staff whose job is to keep the public happy. Kenneth W. Bilby is the new vice-president for public relations. Under him are vice-presidents for press and publicity and for public affairs.

●

Profit-sharing can get too liberal, Western Geophysical Co. thinks. It found that its employees were so well off under its plan they couldn't afford to leave. The company thinks that is unfair, so it now lets an employee with five years' service take a year's leave to rest, find another job, or go into business himself. Full rights to the profit-sharing are retained during leave.

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WATERMAN PEN CO.'S NEW BOSS, ROBERT HOWSE:

Formula for a Comeback

This week, a half dozen things were meshing for Waterman Pen Co. Together they make up a pattern that the company hopes will put it back into the tough competitive race of the fountain pen industry.

The one-time industry leader is ready with:

- A new president, 46-year-old Robert D. Howse (above), promoted last week by the board of directors from executive vice-president.
- A new fountain pen.
- A new, nation-wide batch of distributors.
- A new selling technique.
- A trio of businessmen outside the company who will become members of the board.
- A private financial arrangement that should give the company the money it needs to get on its feet.

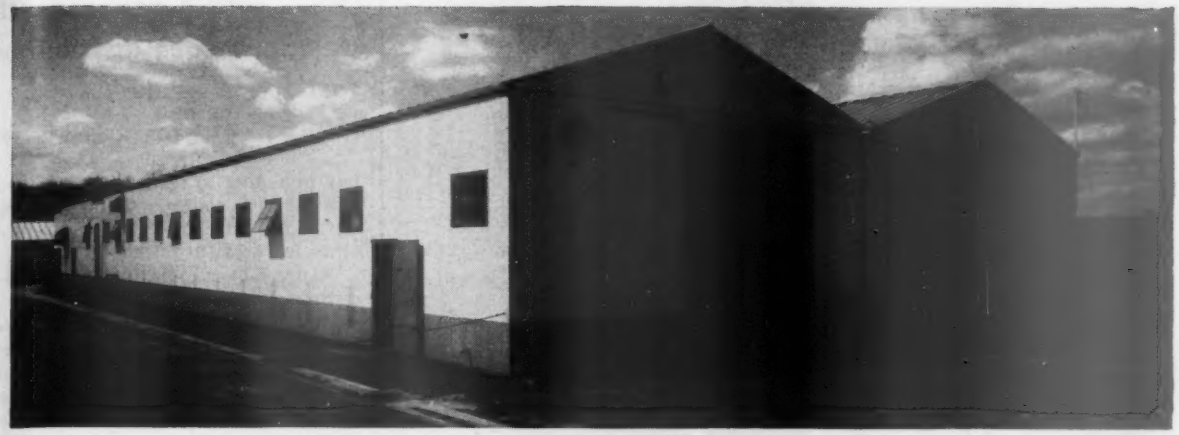
It all adds up to an about face for the company whose founder, Lewis Edson Waterman, laid claim to inventing the first workable fountain pen. From the start, the company has been a tightly run family operation. For years it was a pace setter, but in the postwar period it barely marked time. It was losing position steadily, even faster than the standard fountain pen industry as a whole that was being hit by the new ball-points.

• Outside Help—Frank D. Waterman, president, called for help in May, 1952. A consulting firm found Howse, a professional management man who helped put Argus Camera back in business a few years ago.

From now on it will be Howse's job as president to make good in what he believes is an industry that can stand some jogging.

It has taken Howse about two years to get set. Basically, he is counting on two things: his new product introduced at a press conference this week and an overnight coup that gives Waterman the wide distribution it was lacking.

The new product is a conventional fountain pen, except for one gimmick. Instead of a vacuum-type ink system, it uses prepared cartridges. These you can



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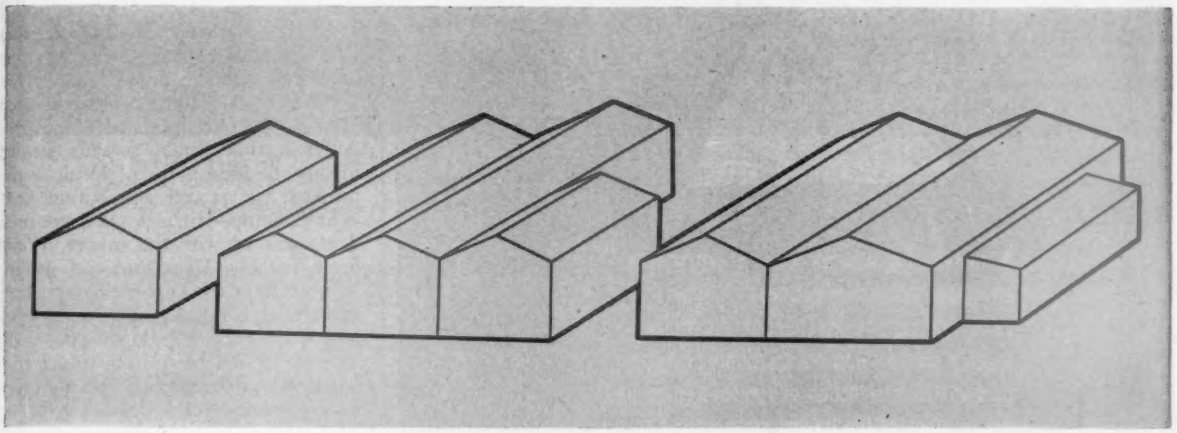

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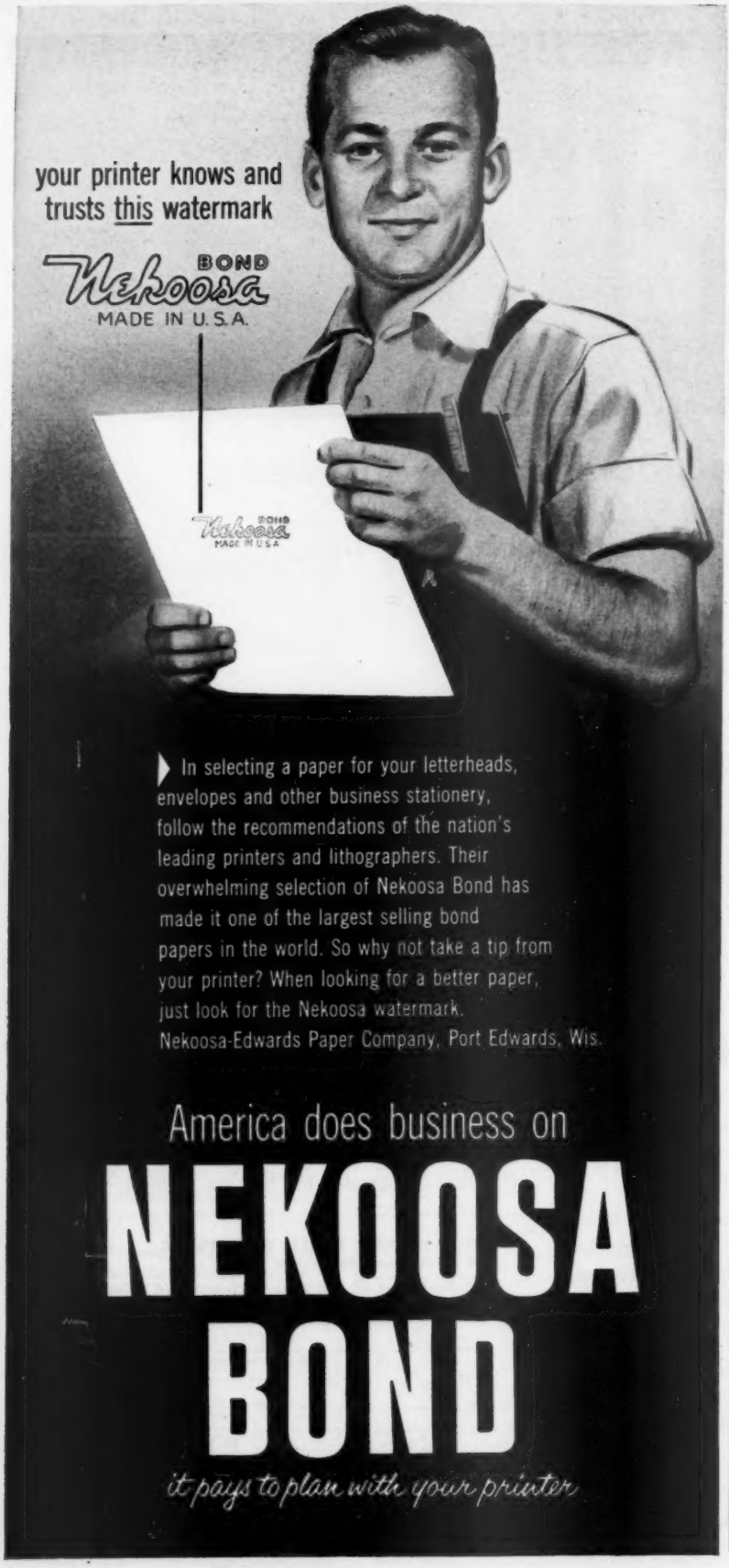
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". . . 'with a new product, we still needed distribution fast' . . ."

STORY starts on p. 122

buy in a store to refill the pen. But if you want to continue to use the old cartridge, you merely fill it like any other ink sack.

Waterman calls the pen the C/F—cartridge-filled.

• **New Brass**—Sold as he is on his new product, Howse from the start realized it would take more than that to spark the company. He has hired a whole new top management staff. His sales chief is a former vice-president of W. A. Sheaffer Pen Co. Howse also hired a new chief engineer, manufacturing vice-president, and a treasurer.

For months Howse worried about the sales organization. Distribution in the East was satisfactory, but elsewhere salesmen were spread so thin that coverage was virtually nil in many places.

"We tried to hire salesmen," says Howse, "but we didn't have the product line that would provide enough income to induce them. With a new product, we needed distribution fast."

• **Sales Setup**—His new sales vice-president came up with the answer. Watch firms—notably Hamilton and Elgin—were shifting distribution from wholesalers to direct-dealer operations. Waterman Pen figured these jewelry distributors would be panting to get their hands on another item. What's more, it was jewelry stores where Howse figured he had his weakest coverage—and the new C/F pen is aimed particularly at the gift trade.

Howse had his doubts about jewelry wholesalers, though. Ordinarily, using that method of distribution would leave the company without direct control of its markets.

The solution Howse believes is unique. His sales vice-president suggested the wholesalers take on the Waterman line, but do nothing but sell. Warehousing and the handling of dealer accounts would be kept in the hands of the factory. The wholesalers readily agreed.

They get 10% of the gross, less than ordinary, but have exclusive franchises and no details to worry about.

• **Control**—For Waterman, this meant it could approve or reject any dealer account, keeping a firm grip on the ultimate retail outlet for its new line. To reach these outlets, it got through the wholesalers a hatful of top salesmen—"20,000-a-year men," says Howse.

Practically overnight, Waterman boosted its sales force from 17 to 107, with 14 distributors pitching the Waterman line. Howse added extra

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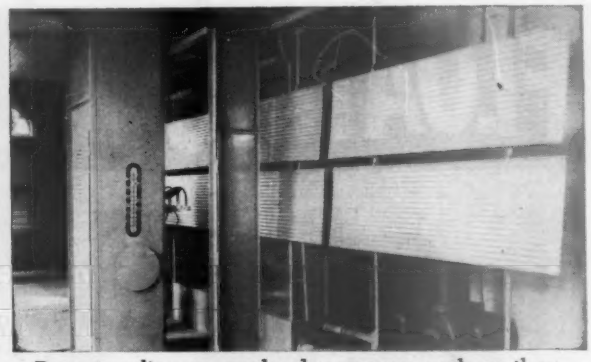
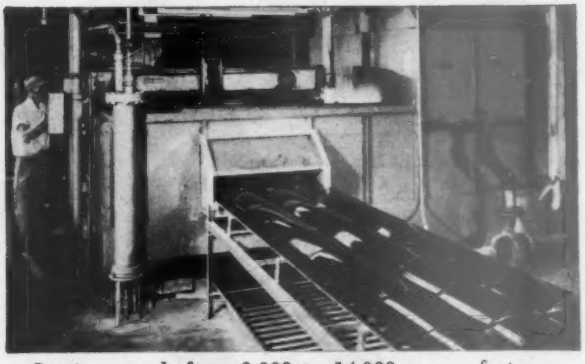
DeVilbiss Automatic Spray Machines cut finishing costs as much as 2/3 and reduce rejects to a negligible number for manufacturers of household appliances, building materials, industrial equipment, soft goods and thousands of other mass-produced items.

Vacuum cleaner housings like these are typical of the parts that can be finished automatically at rates from 540 to 4320 pieces per hour on DeVilbiss Chain-on-Edge Machines.



Parts traveling on overhead conveyors, such as these panels, can be quickly coated both front and back with any material on DeVilbiss Automatic Vertical Transverse Machines.

DeVilbiss Automatic Rotary Machines spray a great variety of industrial products economically and quickly, with absolute uniformity. The operator need only load and unload the table conveyor.



Coating speeds from 3,000 to 14,000 square feet per hour are possible with DeVilbiss Automatic Horizontal Transverse Machines. Here, carpet-sweeper tops emerge with a gleaming finish.

How about *your* company? Is there a job out in the shop that could benefit from the high speed, the smooth, uniform finishes DeVilbiss Automatic spray-painting equipment brings about? Whether you're working with flat objects, parts traveling on overhead conveyors or parts that require both inner and outer coatings, you'll find DeVilbiss has a wide variety of standardized automatic machines to serve you. Call your local DeVilbiss representative for full details.

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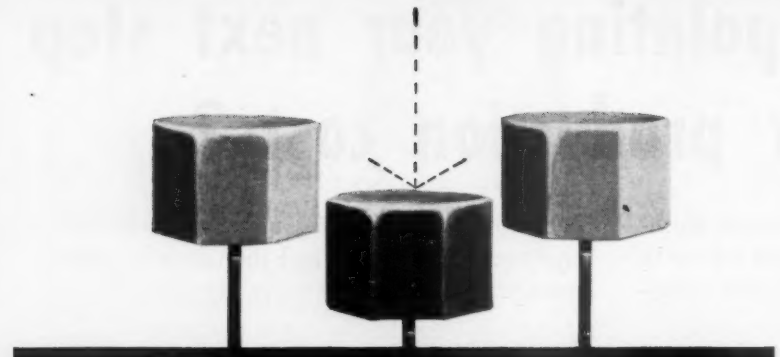

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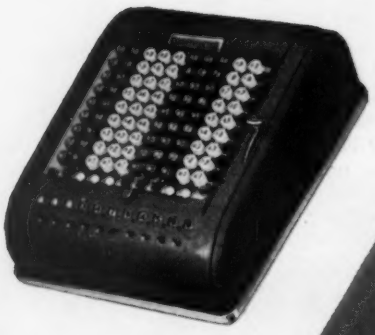

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strength in the field by making district managers out of his own best salesmen.

Howse had to do this kind of maneuvering because Waterman isn't big enough to afford that kind of organization itself.

• **No Giant**—The pen industry as a whole is far from being big. The two top companies—Sheaffer and Parker—do about $25-million apiece. Waterman is far below that.

Then there is the postwar ball-point boom. That gyrating business has kept the whole industry in a tizzy—although Howse says the standard fountain pen hasn't been hit as hard as mechanical pencils. Even so, all of the quality pen makers have come into the ball-point field, some with cheap lines. Waterman has the Sapphire, which is priced far above the throw-away ball-points and the Paper-Mate variety (BW—May23'53,p46).

Altogether the standard and ball-point pen industry make up a hot competitive field—split up so that no one gets a large chunk.

Howse is betting mostly on the quality trade. His C/F at first will sell for $15. It was styled by Harley Earl, vice-president and top stylist for General Motors Corp. Earl had helped Howse restyle the Argus camera line just before the war. Now, Howse plans to retain Earl, who does consulting on his own, for other new lines at Waterman.

• **Training**—This will be Howse's sixth job since he graduated from Yale in 1930. He thinks he is one of the first products of a formal executive development program. Horace Davis, formerly head of Afga Ansco Corp., which is now a division of General Aniline and Film Corp., took him and 11 other college graduates on, put them through a personally supervised training program (at $100 a month) that lasted four years. (Another graduate—George P. Clayson, now Eaton Paper Corp. vice-president.) Howse left Ansco when Davis did. After that he was a space salesman for the Literary Digest, a management consultant, president of Argus Cameras, Inc., and head of his own electro-cardiograph company in Stamford, Conn.

Howse has given himself five years to make over Waterman Pen. He has three years left—and ideas that he thinks will be enough to keep the market bubbling. Some of auto-stylist Earl's thinking has rubbed off on Howse. He says:

"We're competing for consumer dollars, not against another pen company. In this gift business, if we don't keep the public fountain-pen-minded by new styles, new gimmicks all the time, the public forgets about us—and buys a watch."

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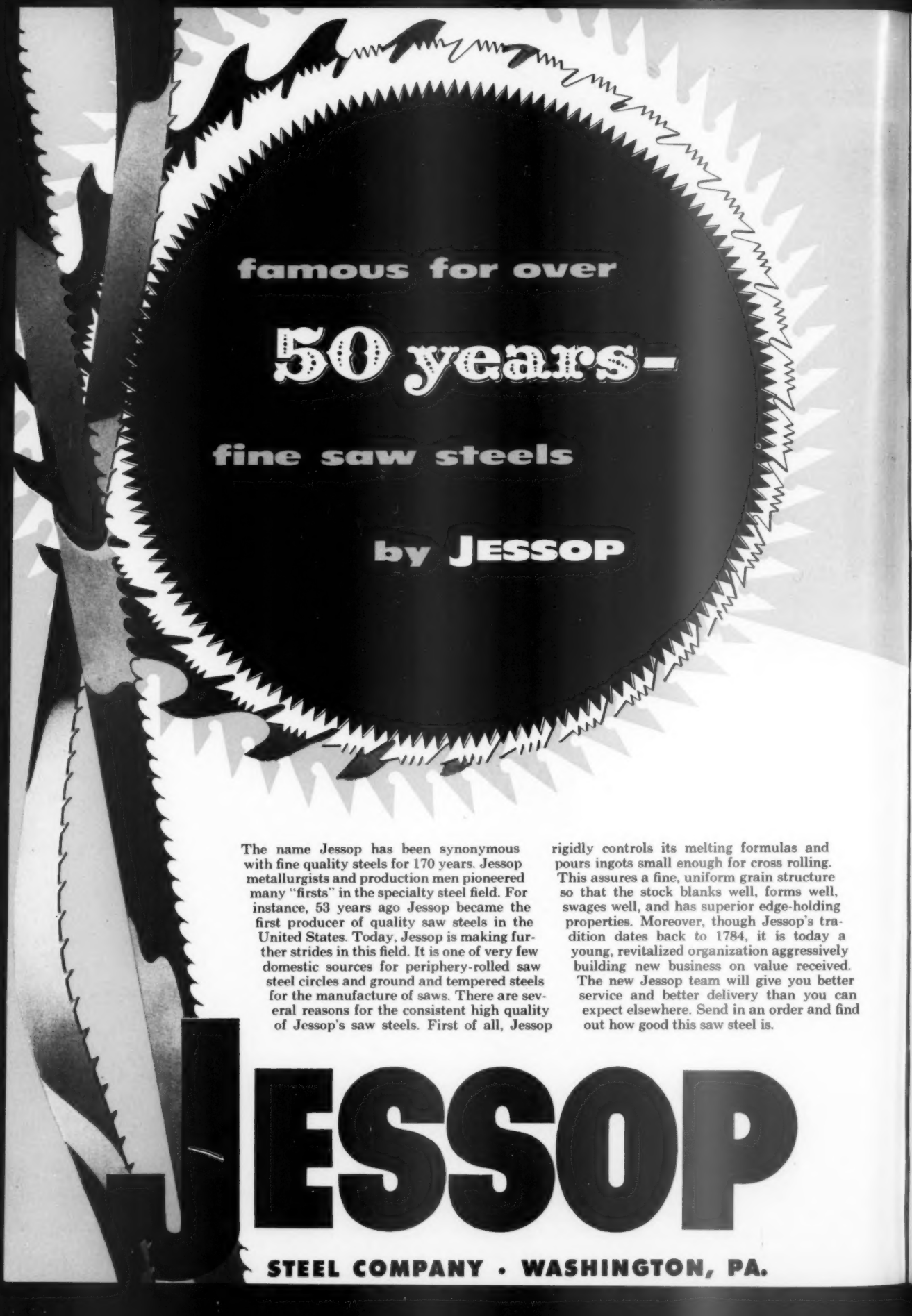

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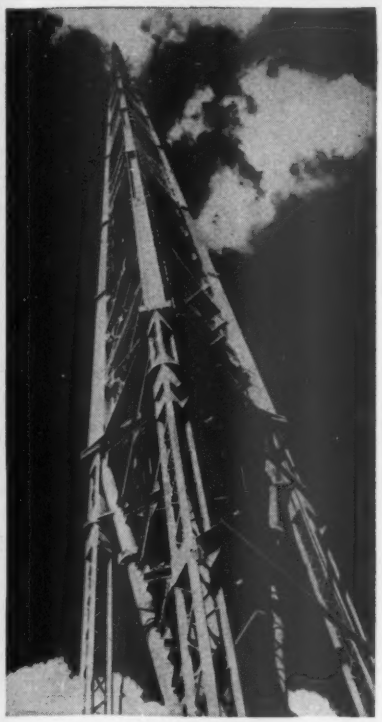

Taller than Tall

OKLAHOMA CITY—New York Central's Robert R. Young talked last week of replacing the Grand Central Terminal in New York with a skyscraper which would be the tallest building in the world—beating the Empire State Building by a few stories (BW—Sep.11'54,p34).

But an announcement from Oklahoma City television station KWTV this week casts a shadow over Young's hopes of having the tallest manmade structure. The station is completing a transmitting tower (picture) that will be 1,572 feet high—taller than the Empire State Building (1,472 ft.) and Young's proposed building.

The tower is 12 feet on each of its three sides up to the 1,420-foot level where it tapers into the base for an antenna. The triangular construction was one of the trickiest fabricating jobs ever attempted and will give station KWTV the greatest coverage pattern in the southwest.

The Eiffel Tower in Paris once held the honor of being the tallest edifice built by man (984 ft.). Built in 1889 it held sway until 1929 when the Chrysler Building (1,046 ft.) took over. The Chrysler fame was short lived when the Empire State replaced it within two years. Oklahomans say their tower is unique—there are no legs or braces to hold it up.

Traffic for the Banks

BALTIMORE—The chief traffic magistrate last week proposed a unique plan that would allow motorists to pay off their traffic tickets at the nearest bank. Officials believe that the scheme, if adopted, would make Baltimore the first city in the country to use a traffic banking system.

The plan was proposed to improve traffic court machinery in collecting old tickets. More than 50% of violators fail to pay their fines within the required time—mainly because of the inconvenience of going to police court.

Baltimore's 68 banks and branches would greatly speed up "neighborhood" collection of fines. Officials said the banks were willing to give it a try because they were already collecting city taxes and could take on the fines without too much trouble.

Sauce for the Goose

MATADOR, TEX.—A new kind of labor force is being used in West Texas. The workers go into cotton fields at night, sing while they toil and demand no money, just barley, for pay.

The new Texas workers are geese that are employed to pull grass from the cotton rows. In a single week, one bunch of honkers cleared 345 acres of weeds without bothering the cotton stalks. They were fed 100 pounds of barley daily but that was much cheaper than the cost of hired hands with hoes.

There is a catch to the new cheap labor, however. Farmers are finding that the domestic geese attract wild geese in the fall and winter. The geese then join forces (forgetting the weeds and cotton) to chew on the tender shoots of winter wheat.

One rancher had to equip his place with a small plane, using a siren to scare away the geese.

"Geese labor sure is cheap but we can't control 'em in the off-work hours," a farmer said when a pack of geese descended on his wheat.

Freezing Out Edna

BOSTON—The rough treatment given New Englanders by hurricanes Carol and Edna in the past two weeks was somewhat eased by a midwestern trucking firm.

Housewives in the Boston area found that their food began to spoil when the power went out. Restaurants and hotels complained that their deep freezers were knocked out and they stood to lose valuable meat and dairy reserves.

Robert B. Riss, president of Riss &

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How we salvaged $253,000 of our lost income

(Based on Company File #H-48-8460)

We were operating our chemical plant at capacity around the clock.

Late one night, vapors from a processing tank ignited and fire spread to the main unit. The tank was a total loss. But that wasn't too important.

Our big problem was in the main unit—every motor, pump and valve had been ruined! Without that unit, we couldn't keep the plant running.

Repairs took three months. The only thing that saved us from a tremendous loss was our Business Interruption Insurance. The $253,000 we received paid our continuing expenses, and gave us the *profit* we had counted on making!

What would happen if *your* company had to close up shop for three months?

All expenses don't just stop, you know that. Rent, interest, taxes and salaries usually have to be taken care of. And maybe a dozen or more miscellaneous overhead items. Where would the money come from?

The safest, surest place to get it is from Hartford Business Interruption Insurance. It pays *continuing expenses*, like those mentioned. But that's not all . . . Hartford Business Interruption Insurance also pays the *profit* you would have made if your business *hadn't* been shut down!

Small or large, every business needs this protection. Ask your Hartford Fire Insurance Company Agent or your insurance broker to tell you more about it.

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Hartford

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Co., Inc., truckers with home offices in Kansas City, Mo., ordered his Boston office to put its huge refrigerator trucks out for public use.

Boston papers carried the announcement of the "community icebox" and housewives lined up at the terminals with their perishables. Each truck has 1,700 cu. ft. of storage space and is cooled by a special unit powered by the truck engine. The units will be available for the remaining visits of the destructive "girls" coming up the East Coast, Riss said.

Seagoing Class

HONOLULU—Visitors at Waikiki Beach last week got a look at a strange mixture of old and new as promoters trotted out rickshas and fibrous glass canoes to catch the tourist's eye.

The "two-wheel taxis" were brought from Japan and will be operated by local boys. Hawaiians will not try to match the rugged races of the Shanghai and Hong Kong rickshas—they walk.

For those wishing a little livelier sport than ricksha riding, local boatmen now have light, speedy outrigger canoes and surf boards made of fibrous glass. Experts say that the new boards and canoes are lighter, more durable and a lot easier to paddle than their traditional wood counterparts.

Surfboard instructors say that the light boards will greatly help the beginner because he will go faster and farther on fewer strokes.

That's in a Well

CINCINNATI—For the first time in the community's history a Hamilton County well digger was indicted last week because he did not give the state specific data on a newly driven well.

Judge Joseph Woeste accepted the report from the grand jury that was based on a seven-year-old law requiring well diggers to make a detailed information sheet available to state conservation officials, covering such data as the depth at which water is struck and the type of earth formations that are encountered.

Thurman Posey, of the A. R. Posey Well Digging Co., named in the indictment, claimed that such information, if given to the public, would give his competitors material they could use in bidding against him. The well was driven on the property of the Virginia Carolina Chemical Co.

Saved by the Gong?

SANFORD, ME.—The lives, jobs, and general welfare of the citizens of this small, New England town are in the hands of the gods—or, a bit more

Mathieson Chlorine: *worth its salt*

Row upon row of mercury cells characterize the uniform high purity of Mathieson chlorine. These cells decompose a salt solution by electrolysis to form a sodium amalgam and wet chlorine gas. Subsequent processes dry the gas, liquefy and cool it, resulting in chlorine approximately 99.9% pure. Above is one of five producing units from which Mathieson supplies quality chlorine to industries from Canada to the Gulf.

Consistent product quality is typical of all Mathieson chemicals. In addition, Mathieson offers consumers the protection of multi-plant production facilities . . . 3 major alkali plants, 7 sulphuric acid plants, 6 caustic soda plants, 3 ammonia plants . . . as well as practical technical assistance with chemical handling and application problems.

In planning your chemical requirements call in your Mathieson representative. Perhaps you can buy to better advantage from one of America's largest producers of basic industrial chemicals.

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BW.

specifically, the directors of two large corporations.

Last week, officials of Goodall-Sanford, Inc. (now owned by Burlington Mills) announced that their Sanford mill, employing 1,800, was for sale. It appeared that the plant might be bought up to be liquidated, knocking out the jobs that have kept the town going for years.

Just as many of the workers were thinking of moving elsewhere in search of jobs General Electric Co. began to make inquiries about buying the mill to house its rectifier and lighting divisions now located in Lynn, Mass. GE officials inspected the plant and were impressed with its 1-million sq. ft. of floor space in five blocks. GE is now considering buying the mill.

Bread on the Waters

SEATTLE—Last week the sockeye salmon made history on Puget Sound. More than $9-million dollars worth of the fish started a run to various inland lakes to spawn—the best pack since 1913, according to local experts.

The return of the gigantic salmon runs to the sound marks the fruition of a long and carefully planned program worked out by statesmen, biologists, fishermen, and canners in the U. S. and Canada. Here is what happened.

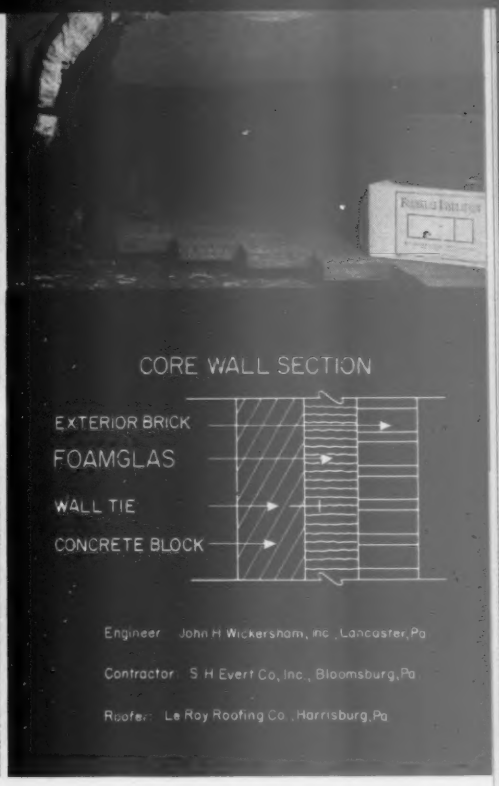
Puget Sound sockeye (the salmon in last week's run) are hatched in lakes in British Columbia. They migrate to the Pacific via the Fraser River system and pass through the U. S. By treaty, fishermen on both sides harvest them, allowing plenty to escape for conservation purposes.

But a mammoth rock slide at Hell's Gate stopped this by barring free passage to the Fraser River, threatening the spawning of millions of sockeyes. An international Sockeye Commission (Canadians and Americans) raised $2-million to install a gateway of tunnels, baffles, and ladders for the fish to make their way to home lakes to renew the life cycle.

The $2-million investment paid off many times as canners are expected to go over the pre-season estimate of 250,000 cases this week with an estimated 750,000 cases expected by the month's end. A case sells for around $35.

Free Parking for Kids

KANSAS CITY—Mission Mart is the name of a growing shopping center on the city's outskirts. It has everything—including Wonderland "parking lot" where mothers can stow their offspring while they shop. Regular fee is 40¢ per hour—but thrifty housewives can redeem their children free with coupons picked up with purchases from local merchants.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Chief Engineer Harold Cahn, General Cigar Co., Inc., Lancaster, Pa., reports . . .

"Our FOAMGLAS insulation has stayed dry in 65% to 85% humidity giving us lasting insulating performance"

Precise control of plant humidity and temperature is extremely important in manufacturing of quality cigars. That's why General Cigar Company put *stay-dry* FOAMGLAS insulation in walls and on the roof of their new Mt. Carmel (Pa.) plant addition to help maintain a constant 65% to 85% humidity and 75° F. temperature.

General Cigar's Chief Engineer, Harold Cahn, explains why they use cellular glass insulation to help maintain the quality of their White Owl, Robt. Burns, Van Dyck and Wm. Penn cigars: "The high humidity which is vital in tobacco processing is mighty rough on ordinary insulations. Until 1948 the roof of our Lancaster plant was insulated with an organic insulation which became water-soaked and ineffective. We removed the old insulation and replaced it with FOAMGLAS because it has a moisture-proof cellular glass structure.

"For six years it has proved it will stay dry even when subjected to this very severe test . . . constant exposure to a very humid atmosphere. Naturally we used FOAMGLAS to insulate the roof and walls when we built our new Mt. Carmel plant addition last Fall."

The waterproof, sealed glass cell structure of FOAMGLAS is mighty important to you, too. It's a big reason why this unique insulation gives such dependably efficient, long-lasting performance insulating roofs, walls, floors, cold rooms, piping and equipment. In addition, FOAMGLAS is light yet strong and rigid . . . fireproof, vermin-proof and acid-proof.

For more facts, please write for our brand new booklet F-94.

Harold Cahn

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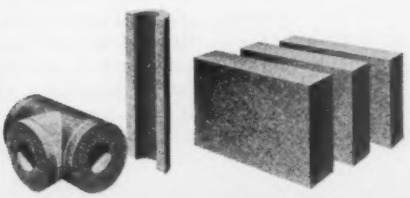

Pittsburgh Corning also makes PC Glass Blocks

LABOR

Testing Out McDonald's Muscle

● **USW's convention next week will be first real gauge of strength for Murray's successor in leadership—taking spotlight away from AFL meeting on West Coast.**

● **Labor is looking for a clue to coming strategy in McDonald's cold war with Reuther and CIO.**

● **Employers are watching, too, with an eye to future of the recent friendlier labor-management trend away from one take-it-or-leave-it steel industry pattern.**

Two major labor organizations convene next week on opposite coasts—the American Federation of Labor in Los Angeles, the United Steelworkers (CIO) in Atlantic City.

Both conventions will make headlines—both are important as major labor forums in a Congressional election year. But within labor ranks, more interest is likely to center on USW than on AFL, though the latter is 10 times as large.

USW, under David J. McDonald, has been getting progressively cooler in its relations with the parent Congress of Industrial Organizations for well over a year. While it is still affiliated with CIO—and likely to stay that way—the steel union today thinks and acts like an independent union. It shows a lot more fondness for the United Mine Workers and John L. Lewis than for CIO and its president, Walter Reuther.

• **Personalities**—The increasingly cold attitude within USW toward CIO is largely due to a clash of personalities between McDonald and Reuther. How far it will go in estranging the steel union from its parent federation depends a lot on the growth of McDonald's personal prestige and strength within USW. The bigger McDonald is within his own union, the bigger will be the problem he creates for CIO—and Reuther.

Although McDonald has had a leading role in every USW convention since 1936, when the steel union was founded, the assembly next week will be his first as full-time chairman—and successor to the late Philip Murray. Many in labor see the meeting as the first gauge of McDonald's strength and popularity. That will provide something of more immediate interest, particularly to CIO unionists, than the inevitable new attacks on the Republicans at AFL's western convention.

• **Prospects**—It's safe, in advance of the actual test, to say that McDonald hasn't yet filled Murray's shoes, as far as the nation's union steelworkers are concerned. Murray was revered throughout the union; McDonald so far is only respected.

But after two years in the USW presidency, McDonald's personal popularity is the highest yet. That's particularly notable because the average steel rank-and-filer isn't drawn naturally to McDonald, as, for instance, steelworkers were drawn to Phil Murray.

• **It's the Record**—Two things account for McDonald's marked gains in personal following: his record of strikeless settlements in steel in 1953 and again in 1954, along with a lot of hard work to put himself across with rank-and-filers.

There has been a lot of speculation in recent weeks over what he might do with his substantial backing (BW—Sep. 4'54,p54). Undoubtedly, the cold war against CIO and Reuther will be carried further—but how much further remains to be seen.

• **Looking On**—It's not only labor that will be watching the steel convention for clues to McDonald's strength. As head of USW, he has directed hard bargaining with employers. But this year—first with basic steel, and later with fabricators—McDonald adopted policies that are taken, in management, to indicate that a new and friendlier relationship may be developing between steel labor and steel industry.

This has been most recently evident in negotiations about to be completed in the nonbasic side of the steel industry.

• **Past Practice**—Up to this year, under the leadership of the late Philip Murray, the United Steelworkers consistently put off bargaining with fabricators until it had negotiated a pattern contract with basic steel. Then it imposed the settlement terms on some 1,100 nonbasic employers on a take-it-or-else basis.

The nonbasic group is made up of companies that do not make steel but use it, sometimes only in a minor way, in manufacturing. These firms doggedly resisted being tied to a basic steel pattern, but without any marked success. Year after year they had to give in.

Back in 1947, during Congressional hearings on the Taft-Hartley Bill, a coordinating committee representing 258 fabricators pleaded with Congress for "freedom from the monopolistic control" of bargaining by USW.

Particularly, they asked that USW be barred by law from insisting that fabricators "do just as the United States Steel Corp. and other basis steel plants do. . . . What it really amounts to is not collective bargaining but collective bludgeoning" of less prosperous fabricators, the committee testified.

The nonbasic group's position against unionwide bargaining was written, at length, into Taft-Hartley hearing records—but not into the bills that became the new federal labor law. USW continued the Murray strategy of imposing approximately the same contract terms on all employers.

• **New Policy**—Murray's death in late 1952 led to the elevation of McDonald. Since then, influenced by McDonald, steel union policies have been shifting gradually. While USW has bargained hard—and not without strikes—its negotiations have tended to avoid the former flat insistence on pattern terms.

The change has been particularly noticeable in nonbasic steel.

USW this year served fabricators with demands pretty much following the pattern—the 5¢-plus of the producers' settlements. But when bargaining with individual fabricators actually got serious, USW generally proved to be willing to do some corner-cutting. It uniformly sought the 5¢ increase in wages—and got it in most places—but "took cognizance of special situations" where the "plus" part of the pattern settlement, covering the fringes, was concerned. This procedure caused a spokesman for one group of small fabricators in Pittsburgh to comment that nonbasic employers "are finding the union more reasonable this year than ever before."

The result has been a wide variety of settlements tailoring the 5¢-plus pattern of basic steel to fit smaller and less prosperous individual employers.

How refrigeration puts extra distance into golf balls

When you tee off with a long drive, you may owe thanks to refrigeration for a few of those extra yards. That's because a freezing process helps the MacGregor Golf Company of Cincinnati make golf balls more lively with lower production costs.

The process calls for freezing solid the golf ball's soft core so that yards of rubber yarn can be tightly wound about it without squeezing it out of shape. This new method helped cut rejects by 75%. Savings amount to $742 per week on just this one operation, using a standard Bowser unit.

There are countless ways in which refrigeration—with a Du Pont "Freon"* refrigerant—can serve industry. Sometimes a new, imaginative process can be developed, or a long-established procedure can be modernized . . . with up-to-date refrigeration.

In most industrial processes using refrigeration—like the one referred to above—the equipment used is charged with Du Pont "Freon" refrigerant. "Freon" refrigerants have been serving industry for years. They are safe . . . nonflammable, nonexplosive, virtually nontoxic. Du Pont produces them to exacting laboratory standards, and their purity and uniformity help insure the long life and efficiency of every type of refrigerating equipment.

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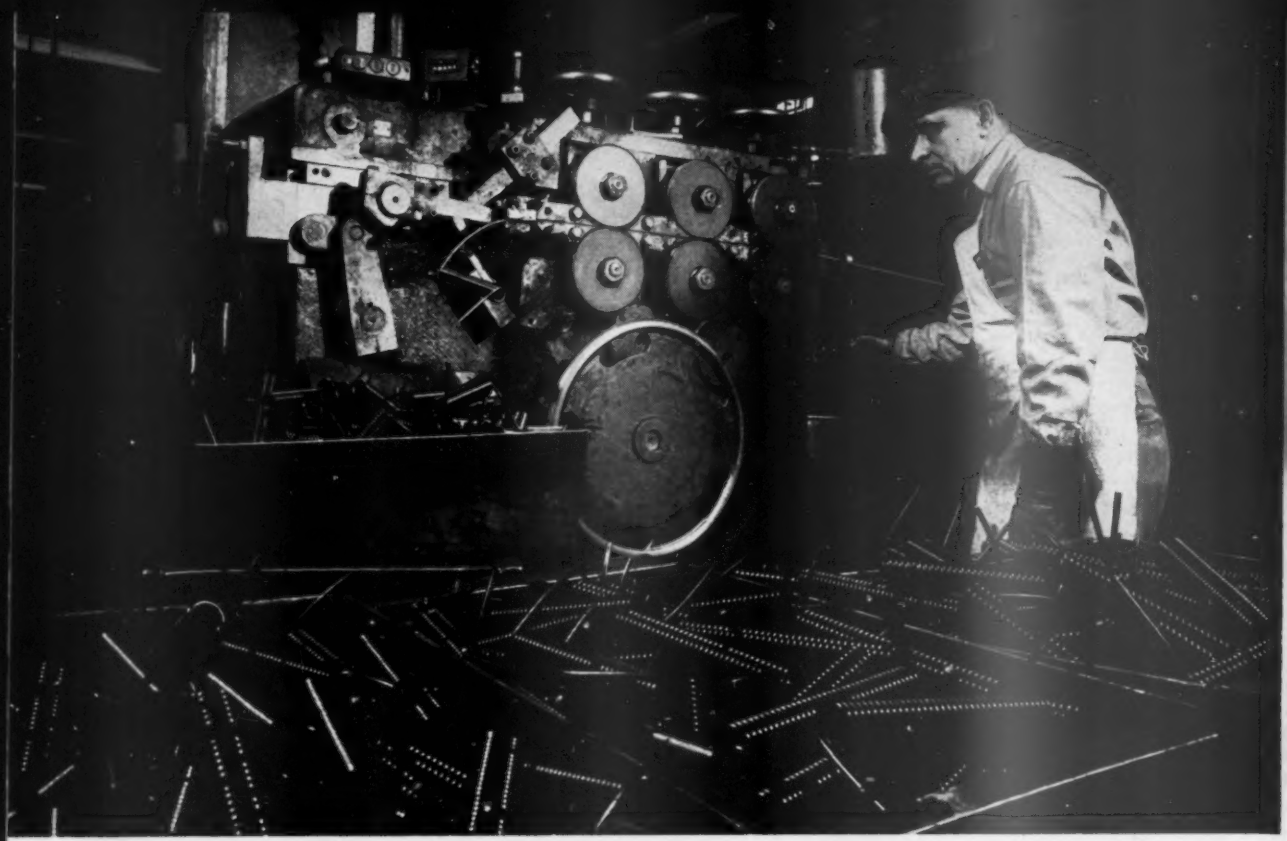
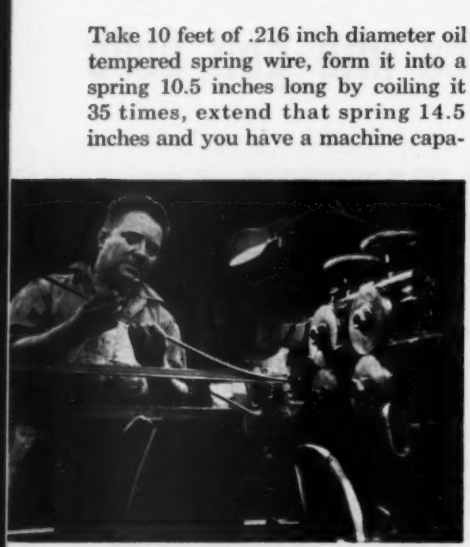


At L. A. Young Spring & Wire Corporation, Detroit, it takes a combination of quality steel wire; modern, high speed machines; and skilled men to produce high quality steel springs like these automobile hood hinge springs.

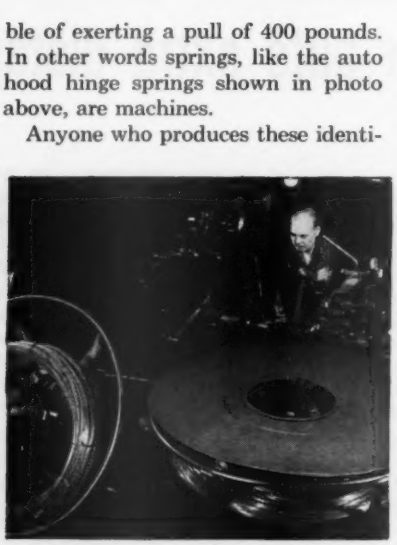
How Pittsburgh Steel Helps L. A. Young Produce High Quality Steel Springs At Machine-Gun Speed

Take 10 feet of .216 inch diameter oil tempered spring wire, form it into a spring 10.5 inches long by coiling it 35 times, extend that spring 14.5 inches and you have a machine capable of exerting a pull of 400 pounds. In other words springs, like the auto hood hinge springs shown in photo above, are machines.

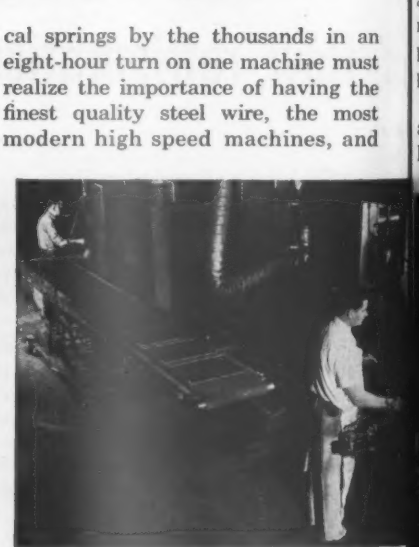
Anyone who produces these identical springs by the thousands in an eight-hour turn on one machine must realize the importance of having the finest quality steel wire, the most modern high speed machines, and



Brake Silencer Springs to dampen auto brake drum vibration are fabricated on this Sleeper-Hartley spring coiler. Each spring contains 34.5 feet of .092-inch diameter hard drawn MB spring wire in 380 coils. After fabrication, the spring is 34⅝ inches long.



Cushion Springs for automobile seats are made from Pittsburgh hard drawn MB spring wire. On this Van Orman coiler and knotter, one of a battery at L. A. Young, 6-coil springs 5½ inches in length, are produced by the thousands.



Your Roast Beef, home-made pies and cakes are supported in your kitchen range on wire racks like these fabricated from Pittsburgh bright basic wire, nickel-plated for resistance to heat and rust. Here, rack frames are fabricated on an automatic resistance welding line.

For Your Auto Riding Comfort zig-zag springs like these are made from Pittsburgh hard drawn MB spring wire on high speed machines. A 41-inch spring contains 51 loops. Produced to an arc with a 13½-inch radius, the arc provides the spring in your seat cushions.

A Spring, the master cylinder of your brake system, releases the pressure when you release your brake. To stand up under this repeated usage, these master springs are made of high quality .067-inch diameter tinned music wire. Into one spring goes 22 inches of wire.

good production men all along the line.

● **Where It Comes From**—Pittsburgh Steel Company, one of the country's leading producers of wire for industry, is an important supplier of wire to L. A. Young Spring & Wire Corporation, because Pittsburgh wire can be depended on to meet or better Young's specifications for grade, size, temper, hardness, and above all, absolute uniformity coil end to coil end and coil to coil. The slightest variation from absolute uniformity in the wire feeding into an automatic coiler at machine-gun speed can cause a misfire that jams the works, reduces productivity, increases costs, reduces profits.

Pittsburgh Steel Company has been a wire producer for over 50 years. The long experience at steel making of their mill men and metallurgists, from the blast furnaces and open hearths through final wire drawing and finishing operations, goes into every pound of wire that is made.

On Pittsburgh Steel wire mills at Monessen, Pa., some of the most modern in the industry, are produced such grades as bright basic; low, medium and high carbon; all types of annealed wire; ACRS core wire; cold-heading wire; oil-tempered spring wire; hard drawn MB spring wire; and shaped wire.

● **Supplementary Line**—The wire mills of the subsidiary Johnson Steel & Wire Company at Worcester, Mass., producers of fine wire specialties, have just completed a thoroughgoing modernization. Their range includes armature binding wire; wire for brushes; metal stitching, hose reinforcement; stapling wire; bobby pin wire; tire bead wire; rope wire; oil-tempered and MB hard drawn spring wire; music spring wire right down to sizes as fine as a human hair.

The combined operations of these plants offer the wire user an unusually broad diversity of high quality wire to select from, assure him fast service to meet a wide variety of applications. Pittsburgh Steel's operations are geared to mesh smoothly with the customer's production-line requirements. Oil-tempered spring wire, for example, is stocked at Monessen for immediate shipment.

If, like L. A. Young, you use steel wire in your manufacturing operations, why not talk to a man from Pittsburgh Steel? You will find him at one of the company's district offices near you, or at the home office. A phone call or a letter will bring prompt action. He will be glad to show how you can get the full benefits of Pittsburgh Steel's ability to make the kind of wire you want and deliver it when, how, and where you want it.

Take Your Foot from the brake pedal and rugged, dependable, springs like these return the brake shoes to the "ready" position. To make this type of spring, 37 inches of .200 inch diameter Pittsburgh oil-tempered spring wire are formed into a 9¾ coil 3½ inches long.

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Shorter Week

That's next on the AFL electrical workers' bargaining agenda. But it won't come up until next year, at least.

A 30-hour work week to prevent possible further unemployment will be the next bargaining goal of the International Brotherhood of Electrical Workers (AFL)—probably in 1955. Delegates representing the union set the shorter week as a prime objective after officers assured them at a Chicago convention that their industry could "cut the work week without cutting . . . weekly pay."

The convention was solidly in favor of a shorter work week—despite employer protests against "conditions of employment [already] uneconomic for the industry." Delegates differed, however, on how the work week should be cut.

• **Proposals**—Three plans were placed before the convention. One called for cutting the work week half an hour every six months, until a new standard of 30 or 32 hours a week is reached, to prevent undue hardship to employers.

A second proposed an immediate reduction of the work day from eight to six hours, and a 30-hour week without any drop from present 40-hour pay.

The third, advocated by J. Scott Milne, IBEW president, urged the maintenance of the eight-hour day—the same worked by other building craftsmen—with a reduction of the work week from five to four days, keeping present five-day pay.

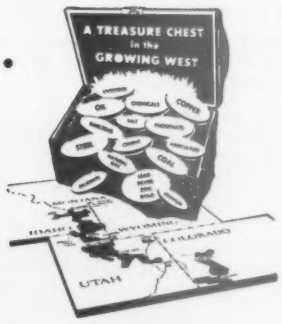
• **Choice**—Delegates chose the five-day, 30-hour week, and called on locals to press for it in the next round of contract negotiations. Since bargaining covering 560,000 of IBEW's 625,000 members has been completed for 1954—with raises ranging from 4¢ an hour to 25¢, according to the union—the shorter-week issue can't come up generally until next year. How strongly it will be pressed when it does will depend largely on the economy—and employment levels—in 1955.

The IBEW convention—probably the largest ever held by a union—also:

• Showed new vitality and internal strength under Milne, former secretary-treasurer of IBEW who succeeded Daniel W. Tracy as president. Quiet reorganization is under way, and new techniques are being adopted. The result will be a competitive organizing drive that could rock the new AFL-CIO jurisdictional peace pact.

• Praised employers in the industry and the good relationship that has

on mineral wealth unlimited in "Treasure Chest" land . . .



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made possible what the union calls "work conditions and wages [that] are the best in history." At the same time, the union—again looking toward 1955—noted that the stop point for raises hasn't been reached yet.

• Urged the private development of atomic energy for nonmilitary use by government license—and staked out a fresh claim of jurisdiction in the atomic-energy field.

• Heard Donald S. Clayton, Sr., head of the National Electrical Contractors' Assn., warn that present costs in the construction industry are a big reason for the "do-it-yourself" trend that is making inroads into contractors' business—and workers' jobs. Commenting that NECA is going to "fight back against this trend," Clayton asked for IBEW's help.

• Refused to set up a fund to pay strikers weekly benefits amounting to 75% of regular pay; delegates decided this would encourage and increase the number of strikes, and delay settlements.

• Authorized locals to downgrade unqualified journeymen electricians to apprentice status at lower pay—as an added guarantee to employees that journeymen members of IBEW will be competent electricians. Downgraded journeymen may regain their old status by taking additional training, the union announced.

VIOLENCE at the Square D plant in Detroit: Labor hates nothing more than . . .

Strikebreaking: When Unions See Red

Employers watching the violent Square D Co. strike (picture) in Detroit this week could ponder one apparent lesson: In a militant labor area there is nothing unions fear or hate more than strikebreaking.

That is the hard fact in an otherwise tangled situation at Square D. Hatred of strikebreaking has made locals of the strongly anti-Communist United Auto Workers (CIO) lend support to members of a union tossed out of CIO on Communist-domination charges—the independent United Electrical Workers. Moreover, the UAW support is directed against a company willing to solve the entire affair by signing up with a CIO union—the International Union of Electrical Workers, bitter rival of UE.

• Long Memory—When Square D reopened its plant last week in an attempt to break a long UE strike, it counted on a hands-off attitude on the part of other Detroit labor groups. If the UE local could be isolated by a Communist-domination charge, the company figured, a strikebreaking move would succeed.

For the first few days it appeared that the strategy would work (BW—Sep.11 '54,p42). But Square D reckoned without the long memory of Detroit-area unionists. As one laborite commented, "Reading the papers, it sounds like the middle 1930s again." That's the way it sounded to the more militant UAW locals, too. Local 600 at Ford, the biggest in UAW; Dodge Local 3; and Detroit Steel Products Local 351 reinforced UE picket lines. Other UAW locals joined them on the UE picket line, to make clear that as much as the auto unionists might dislike Communists in labor, they dislike strikebreakers more.

This week, with anti-Communist unions backing the strikers, the company had lost most of its earlier optimism.

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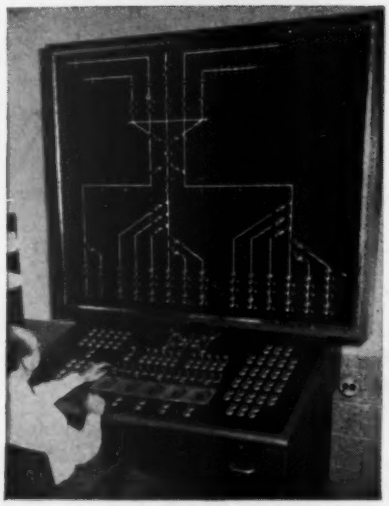

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Under the Wire

IUE-Westinghouse last-minute settlement ends threat of major strikes in electric manufacturing this year.

A two-year contract initialed just a few hours before a strike deadline last week averted a walkout by the International Union of Electrical Workers (CIO) against Westinghouse Electric Corp. It also ended major threats of work stoppages in electrical manufacturing until mid-1955 at the earliest.

• **Rejection**—IUE's contract with Westinghouse actually expired June 30, but negotiations were extended by agreement. IUE, however, appeared more interested in hammering out a settlement with General Electric Co.

When IUE accepted GE terms averaging out to slightly more than a 5¢ an hour raise, a quick agreement with Westinghouse on about the same figure was widely expected. But Westinghouse-IUE negotiations snagged—leaving the corporation "amazed and confused," it said, because an offer "the equivalent of GE's, or better" had been flatly rejected.

IUE set a strike deadline for 42,000 workers in 26 Westinghouse plants. Members who had earlier voted overwhelmingly to strike, if necessary, weren't too happy at the prospect of a walkout after GE's settlement.

• **Terms**—Bargaining against time, Westinghouse and IUE compromised their positions and, with the clock running out, initialed the agreement running to Oct. 15, 1956. It provides for a reopening on wages between Sept. 15 and Nov. 15, 1955. Hourly workers will get raises of 3½¢ to 7¢ an hour, with the average—as in the case of GE—right around 5¢ an hour. Clerical salaried employees represented by IUE will get $1.40 to $2.80 a week more. These increases (retroactive to July 1) were already in effect for some 40,000 non-IUE employees of Westinghouse.

As a concession to IUE, the increase will be added to the base rate of incentive workers, boosting their earnings when they produce more than the standards for their jobs.

• **Pensions**—Westinghouse also agreed to raise pension benefits for employees who retire after Nov. 1, 1954; in the future, company-provided retirement pay will amount to $1.70 a month (a 10¢ increase) for each year of continuous service for Westinghouse up to a maximum 30 years. Under the revised program, a worker who retires at 65 after 30 years and who receives the maximum Social Security benefit will get a $159.50 monthly pension.

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Acme Idea Man William W. Allen of Denver, worked with The Gates Rubber Company officials on this efficient packaging system.

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Changing Rules

NLRB is doing it, and it leaves doubt as to when new policies take effect. Courts are helping to decide.

When the National Labor Relations Board reverses a former board policy—as it does frequently these days (BW—Aug.21'54,p114)—at what stage of NLRB proceedings does the new policy take effect?

Many employers and unions have asked that question since NLRB began its "scrutiny and reexamination" of former board policies a year ago. It's important because the answer may hold the fate of (1) old cases still pending before the board, and (2) cases previously decided by the board and in the courts for enforcement orders.

NLRB gave a partial answer when it revised its standards for determining board jurisdiction over cases (BW—Jul. 10'54,p144).

The board announced then that "the new standards will be applied to cases pending before the board as well as to those filed hereafter." Acting on this basis, three trial examiners in the past two weeks have asked NLRB to dismiss unfair-labor-practice charges brought under rules subsequently revised.

• **In the Middle**—Hearings on one of the cases, involving Central Packard Co., an Akron auto dealer, were completed before the board announced new jurisdictional yardsticks. Under the old regulations, Central Packard came under NLRB's wing because its out-of-state purchases of automobiles and accessories exceeded the $500,000 minimum for NLRB jurisdiction.

James A. Shaw, trial examiner, took a second look at Central Packard's business records after the NLRB's new order came out. He recommended that the board refuse to take jurisdiction—despite the advanced stage of the case—because the company's business is less than the new minimum of $1-million a year.

In the two other cases similar recommendations were handed down by trial examiners.

• **Court Cases**—The trial examiners' recommendations spell out what NLRB intended by its announcement on the backward application of its new jurisdictional rules. The status of cases in the courts is still uncertain.

Under the Taft-Hartley Act, NLRB must go to court for enforcement orders if its decisions aren't obeyed. It has, according to Chmn. Guy L. Farmer, a "continuing responsibility . . . to enforce its decisions in the appellate courts, which places us in the position

of having to reaffirm before the courts the legal interpretations made by our predecessors.

Following this policy, the board doesn't now intend to withdraw enforcement cases in court against, say, an employer whose business volume met a predecessor board's minimum requirements for jurisdiction—but not the new standards. For instance, the board refused to withdraw a petition for court enforcement of an NLRB decision involving National Gas Co., although—by new jurisdictional rules—National Gas wouldn't come under the board's authority.

• **Conflicting Decisions**—The U.S. Court of Appeals in St. Louis, however, took note of the changed standards in the National Gas case. It commented on the NLRB's "untenable position of asking the court to proceed in a case in which [the board] has precluded itself from proceeding, both by express decision and by the adoption and promulgation of self-limiting rules." The court denied enforcement of the NLRB order against National Gas.

In at least one other case, in San Francisco, a federal court has held the opposite. In an action based on another issue on which NLRB has changed its policy, the court held that it could rule only on the basis of the board's policy at the time the enforcement order was sought.

NLRB has indicated that it won't ordinarily appeal to higher courts an adverse decision involving an employer who doesn't meet the board's new standards.

Commerce Dept. Checks Underemployed Labor

Unions complain that national figures on unemployment are not an accurate measure of joblessness. Among other things, they say, government statistics do not reflect underemployment—the part-time weeks worked, with loss of pay, because of slack business or other economic reasons.

Last week, the Commerce Dept. issued employment statistics for August and included the number of people working less than a 35-hour week, but still considered, for statistical purposes, as employed. Unions snatched at the report as support for their arguments.

• **Check**—According to the Commerce Dept. check, 2.5-million of the 62.3-million "employed" in August were working involuntarily less than a 35-hour week—three-fourths of them between 22 and 35 hours a week, the others (many in mining) less than 22.

Of the 2.5-million, the special report noted, 1.5-million normally work a full 40-hour week.

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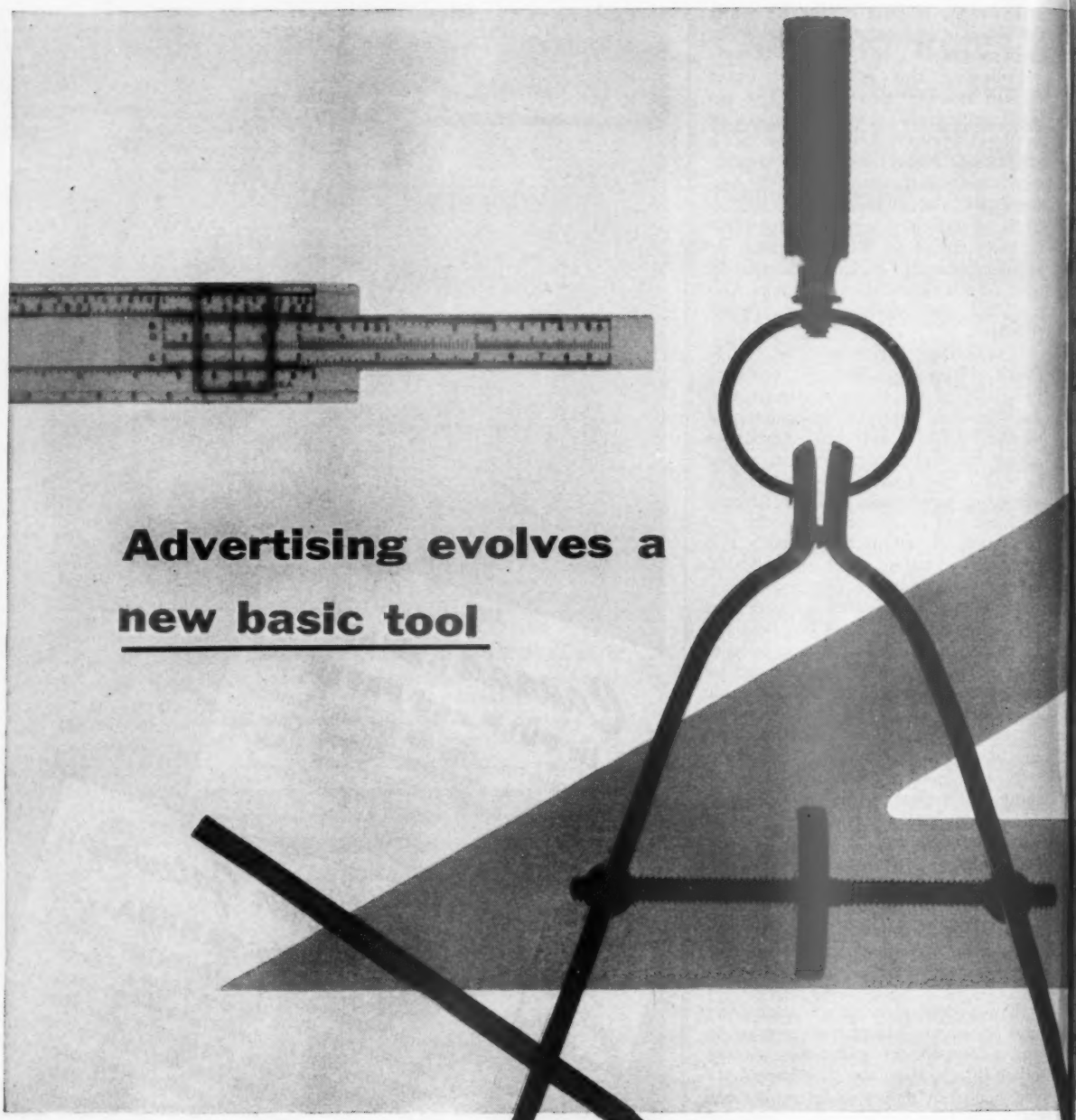

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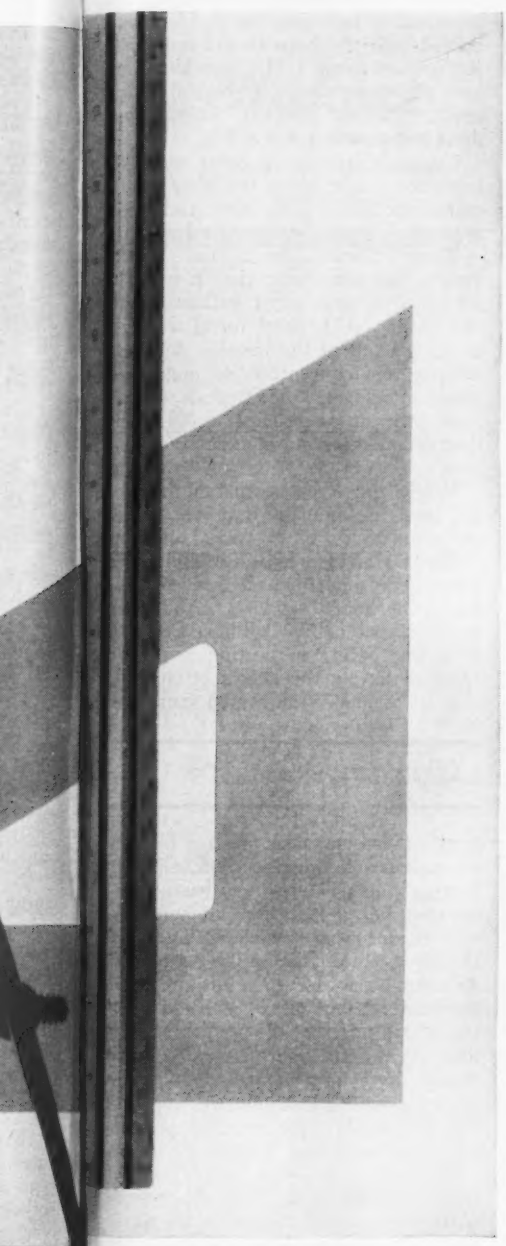

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AFL and CIO: At It Again

A long-quiet jurisdictional fight over building materials has erupted once more, and an Ohio manufacturer finds himself on the wrong side of the fence.

Reeves Steel & Mfg. Co., 50-year-old fabricator of rain spouts, gutters, ventilators, and other products widely used in construction, last week placed a problem before government officials in Washington: It can't sell its products, it complained, because it has a contract with the wrong union.

Back in 1939, Reeves signed a contract with the CIO United Steelworkers covering its Dover (Ohio) plant—which was then buying steel bars from the mills and rolling its own sheet and strips for fabricating. Technically, there was no question of USW jurisdiction; the steel union's province covers both steel milling and fabrication.

• **AFL Squawk**—Traditionally, however, AFL building-trades unions have held clannish lines on a demand that building materials must be AFL-made. Ten years ago, this created a long and bitter controversy in electrical manufacturing and installation. Occasional echoes of that old dispute are heard, but recently they have been drowned out by a bigger fuss: the insistence of AFL's Sheet Metal Workers that metalware used in construction must be fabricated on the site by its craftsmen members or produced in shops using AFL sheet metal workers.

Through the years, there were rumblings against the Reeves-fabricated products made with USW workers, but as long as building materials were scarce the squawks weren't vehement. Since building jobs depended on the availability of materials, the AFL building tradesmen paid little attention to the supply source. However, starting in 1952, when supplies began catching up with demands, troubles began piling up for Reeves.

• **Test Case**—The first popped up in Cleveland, still the center of most Reeves' problems. A number of long-established jobbers suddenly backed off from stocking USW-produced steel products. They told Reeves that its products were being rejected by contractors. The contractors claimed that AFL sheet metal workers refused to work with Reeves materials either because (1) they carry a USW label or no label at all, or (2) the materials were "defective" or, being mass-produced, wouldn't do for jobs that needed special on-site fabricating.

Cleveland jobbers returned whole carloads of stock. New orders fell way off until now 70% of Reeves' Cleveland business (at one time 35% of all the company's rainware was marketed in Cleveland) has disappeared.

• **Spreading**—Reeves tried to handle the situation as a local outbreak until, early this year, one of its big jobbers in Chicago—Simmonds, Folkening Co.—notified the company that Reeves-made products were being turned down on a large construction project because they carry no AFL label.

Subsequently, other jobbers in Chicago cut Reeves orders for the same reason—although a Chicago official of the Sheet Metal Workers (AFL) said its members "wouldn't refuse to handle sheet metal products simply because they carry a CIO label. . . . Our people are just making fittings right in the contractors' shops." Whatever the reason, Reeves' important Chicago market suddenly was cut down, too.

Then, several weeks ago, what Reeves describes as a "craftsmen boycott" of its CIO-made products spread to Detroit, and began pinching off sales there.

• **Gains**—Much of the lost business is apparently going to small sheet metal shops set up to do rainware fabricating with AFL labor—at a greater cost, according to Reeves, than in the company's mass-production plant under CIO contract in Dover.

Another big share of the former Reeves business, particularly in the Cleveland area, has gone to a sheet metal concern that has been taken over by Inland Steel Products Co. and operated with AFL workers.

• **Appeal to CIO**—Earlier this year, noting the success of AFL-contract competitors, Reeves placed its problem before the United Steelworkers (CIO). It said flatly that it operated at a loss last year, and is being carried financially by its metalware division, which turns out products not normally handled by craft-unionists.

Reeves asked USW help in working out some solution to its trouble with the crafts. USW, signing a new contract with a 7¢ hourly raise, promised full cooperation in getting the company's products accepted. Nothing has happened since then to carry out the promise.

• **On to Washington**—When the Detroit pinch began, Reeves took its problem to Washington, supported by the Dover Chamber of Commerce and civic organizations. The company put its plight before the National Labor Relations Board and other agencies, and came away empty handed. The agencies

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promised to look into the problem but offered little real hope to the company. Reeves says it was told: "This situation isn't a secondary boycott. Nobody is on strike, or being picketed. Frankly, we don't know what it is."

Currently, efforts are being made to bring the matter before the Bender subcommittee hearing on labor racketeering, which opens in Cleveland shortly.

• **Three Choices**—As a last resort, Reeves has announced that it will (1) set up a rainware plant outside Dover and employ AFL sheet metal workers; or (2) get out of the rainware business entirely, and concentrate on metalware products in which AFL craft unions have little or no interest; or (3) shut down completely and liquidate the company.

While the Reeves situation has, so far, been the dramatic one, it isn't the only case of its kind. An Akron ventilator maker also ran into difficulties when AFL craftsmen balked at handling CIO-made products. And, currently, Republic Steel's Burger Div. and Wheeling Steel's fabricating works are reported feeling the effects of an AFL boycott of USW-fabricated rainware.

LABOR BRIEFS

Antitrust action taken under a California state law enjoins members of AFL's Brotherhood of Carpenters from refusing to install prefabricated kitchen cabinets made by Bilt-Well Cabinets of Dubuque, Iowa. The union contended its refusal was due to a dispute with the manufacturer over wages and work conditions, and that the National Labor Relations Board—not state courts—should have jurisdiction. The court turned down this argument, applying the 50-year-old state antitrust law for the first time against a union.

•

British unions claim 8,093,837 members in 184 organizations—a peak membership and an increase of 5,387 since August, 1953.

•

Sole arbitrator of disputes between Republic Steel Corp. and United Steelworkers (CIO) for the next two years will be Harry H. Platt, Detroit attorney and permanent umpire for International Harvester Co. and the Farm Equipment Workers (Ind.). Platt is also on the arbitrator staff of Ford Motor Co. and United Auto Workers (CIO).

•

Cooperation in promoting the sale of wallpaper, and in curbing foreign imports, is planned by the Wallpaper Institute and United Wallpaper Craftsmen (AFL). The agreement on a joint campaign followed the signing of a new contract that raises pay by 3¢ an hour.

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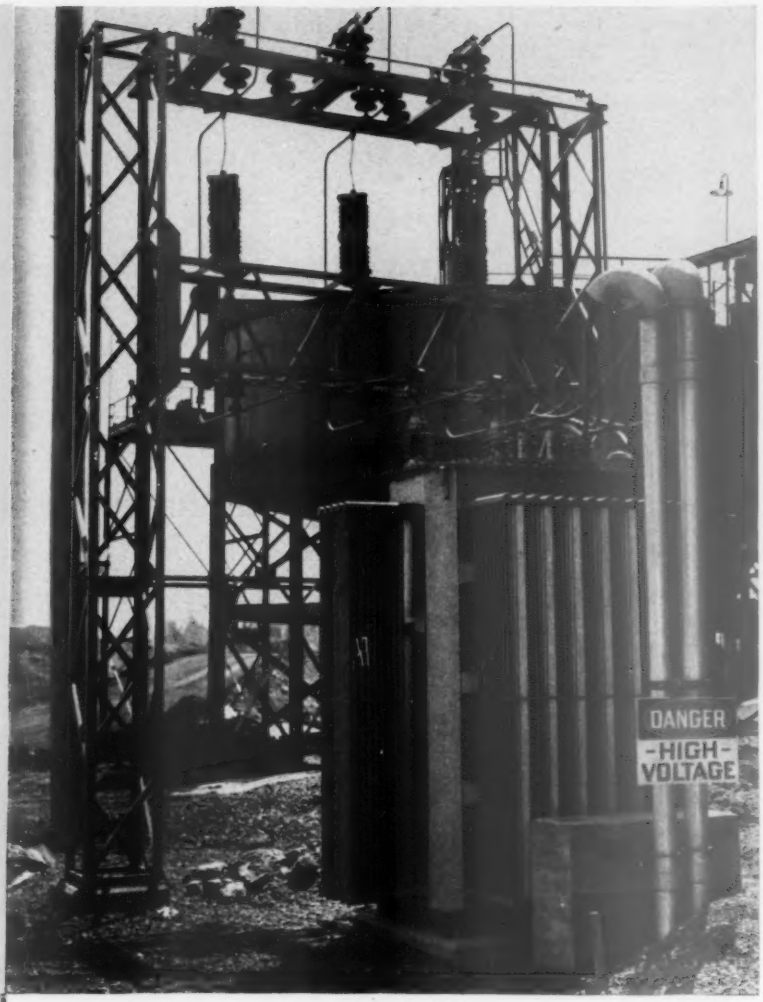

3000 kva Wagner Power Transformer at Cleveland-Cliffs Iron Company mine. It is oil-immersed, self-cooled (Type OA) and is rated 22,900 to 2400/4160Y. Below is shown a 1000 kva Wagner Noflamol liquid-filled substation transformer in the Cleveland-Cliffs Plant.

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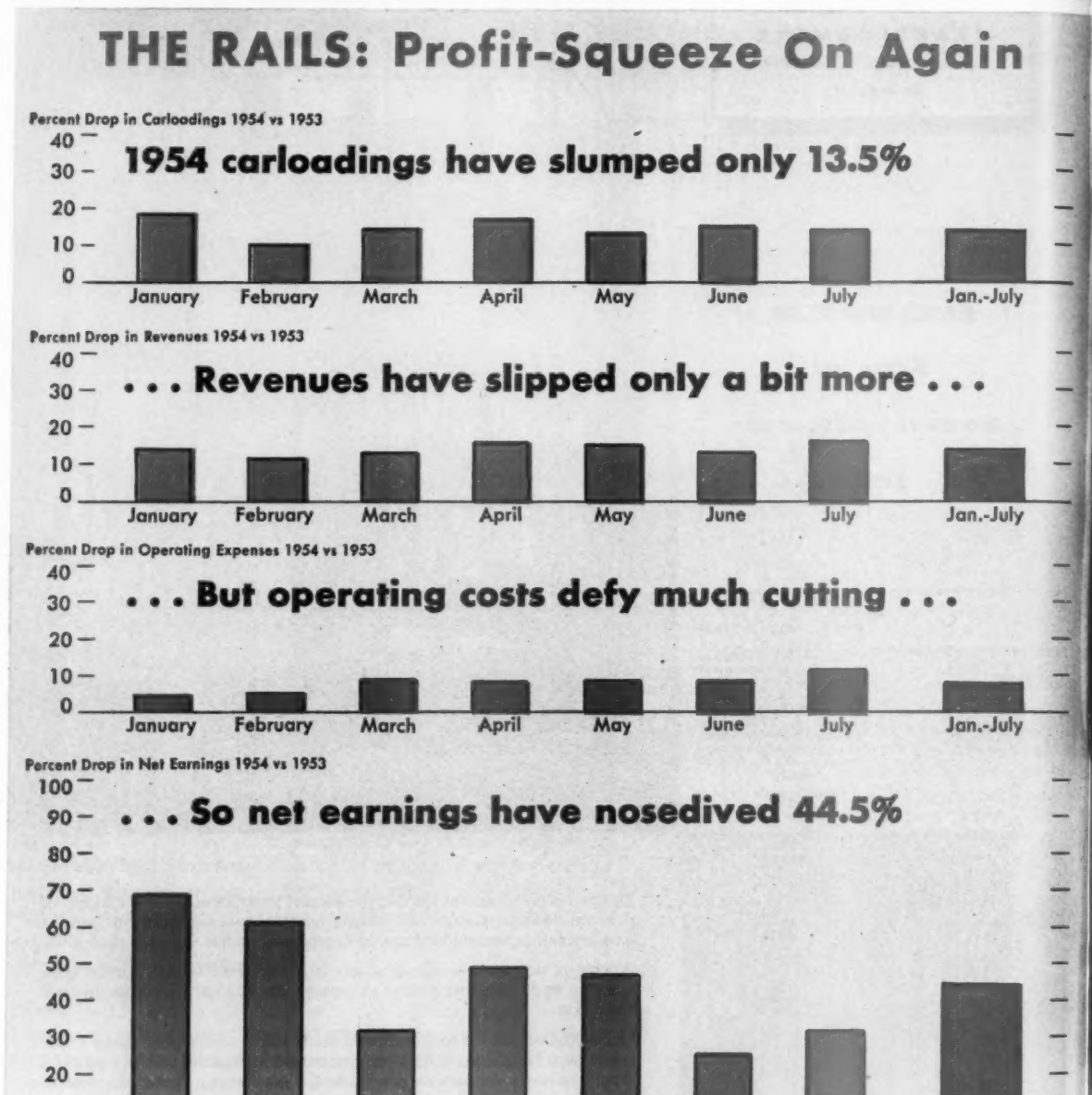
AUTOMOTIVE BRAKE SYSTEMS—AIR AND HYDRAULIC

WT54-B



And Worse Is Still to Come

The morose chart above expresses in percentages the sad doings of the Class I railroads for the first seven months of 1954. And lump sum performances looked just as poorly for the 130 big roads that carry 99% of all the nation's rail freight and passenger traffic.

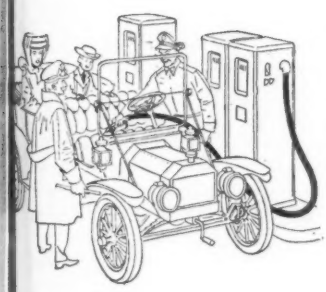
Carloadings stood at 22.3-million cars. The fall from the 1953 period was a fat 13.5%.

Gross revenues were a bit under $5.4-billion, and the drop here was 13.8%.

Net earnings plopped way down to $272-million, off 44.5%.

More black clouds clutter the horizon. Evidence already in indicates that August will drag the up-to-now showing for the year still lower. Carloadings for

upgrading "model T" fuels into high octane gasoline



Satisfying the thirst of millions of high compression automobile engines is becoming more and more of a headache to America's refiners.

In 1953, nearly 44 million motorists consumed almost 14 billion gallons of high octane gasoline. These premium fuels represent a mere 13 percent, or less, of the total amount of petroleum products normally processed from crude oils.

The problem: how to squeeze a higher percentage of this high-test gasoline from petroleum.

One solution lies in a process known as catalytic reforming, which applies a combination of chemical treatments to increase the yield of high octane gasoline from the tremendous surplus of less valuable, low grade fuels. For many refiners, catalytic reforming of these "Model T" fuels is the difference between profit and loss.

Building plants to profitably recover high-test gasoline from marginal fuels is but one of many Blaw-Knox activities. Blaw-Knox engineering achievements are increasing productivity and lowering costs in major fields of industry. The list of products and services below is indicative of the broad scope of Blaw-Knox activities.

BLAW-KNOX COMPANY
Farmers Bank Building, Pittsburgh 22, Pa.

BLAW-KNOX

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Blaw-Knox Equipment Division
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Gas Cleaning Equipment
Open Steel Grating
Radio, TV and Transmission Towers
Road Paving Machinery and Construction Equipment
Steel Forms for Concrete Construction
Steel Plant Equipment—Water Cooled Doors, Frames, Reversing Valves, etc., for High Temperature Furnaces

Buflovak Equipment Division
Buffalo 11, N.Y. and Mora, Minn.
Chemical, Dairy and Food Process Equipment

Chemical Plants Division
Pittsburgh 30, Pa.
Engineers and Constructors of Chemical Process, Industrial, Petroleum and Atomic Energy Plants

Foote Const. Equip. Division
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Union Steel Castings Division
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Heavy Industrial Steel Castings
Ordnance Castings

Rolls Division
(Pittsburgh and Lewis Rolls)
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Iron, Steel and Alloy Rolls for Rolling Steel and Other Metals

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. . . leading manufacturer of relays for every electrical and electronic use. Design, engineering and production facilities geared to your individual requirements. *

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Write for Catalog No. 122 showing complete line of P & B relays.

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REVOLVATOR
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Durability — built in by 50 years of Revolvator Co. experience—is still the fundamental of the Red Giant liftruck line. Maneuverability, plus the safety of their exclusive double stroke mechanism, make the models shown leaders in their fields. There is a Red Giant liftruck available for every use—for every capacity.

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the month fell 16% below August, 1953, hitting the poorest figure for the month since 1939. It was the second heaviest monthly drop this year, trailing only April's 16.7%. It also marked a considerable speeding up from the 13.8% average sag in the May-July stretch.

• **More to Come**—Off the record Wall Street estimates for the full year look even worse, at least in some sectors. The East figures to be the biggest loser, with the giant Pennsylvania apparently headed for an 80% fall below 1953 profits, and the New York Central for a 90% drop. Things look a bit better in Dixie, and west of the Mississippi. The Union Pacific is actually expected to hold level with 1953, while the Santa Fe's predicted slump is only 25%. The Seaboard Air Line even sees a modest profit rise. Generally, though, the decline will heavily affect many roads.

As for railroad men, they are risking no predictions—at least not in public. A lot of Wall Streeters share this reticence; both groups were severely singed by the prophecies last spring that traffic and earnings would start a sharp climb during the summer (BW—Jun. 12'54,p128).

• **Possible Rally**—Talking privately, many of the experts are less clamlike, and on some points show a fair unanimity of opinion. There is general agreement that both traffic and revenues for the second half as a whole will shape up meagerly against the 1953 showing, despite a possible rally in the remaining months, and on the face of the earlier and cheerier guesses. There is equal agreement that 1954 will be one of the most disappointing stretches in the past 15 years. Carloadings are expected to be the lowest since 1939, while both gross revenues and net earnings are seen as the worst since 1949.

One group of students of the rails gets fairly specific in its anonymous predictions for the final 1954 showing. These seers say that gross revenues for the year will not pass $9.3-billion, a comedown from the $9.6-billion-plus that some hardy optimists foresaw last spring. If the lower figure is correct, it will be 12% below 1953's record $10.7-billion, and 1% to 2% below 1950, despite interim rate increases.

The same experts think earnings will be little over $600-million; a few even predict $575-million. In the spring, estimates ranged between $650-million and $675-million. The revised figure would be a drop of well over 30% from 1953's postwar record of $871-million, and around 25% below 1950.

• **Why So Steep?**—The very nature of the railroads account for their taking a worse beating from the recession than other industries. Particularly it is due to the extreme vulnerability of the rails to any slowing of the nation's industrial activity, and to the relatively fixed nature of much of their costs.

Industry—and notably durable goods—provides the life blood of the railroads. The hauling of heavy goods, and the raw materials that go into them do the biggest job of filling the railroads' tills, and it is precisely these fields where the recession has been most marked.

Fixed costs are another railroad hazard. By the nature of their operations and the vast size of their physical plant they are barred from the quick adjustments to falling sales that other trades can practice.

Of course, in good times this state of affairs has its very rosy side. The war years showed what a lovely leverage the rails could get from steeply rising gross. Trouble is, the same leverage works in reverse when gross sags, as it is doing now.

• **Hard to Change**—It would be a Herculean task to change this basic situation. It's a tough enough job just holding costs even, much less getting any serious reductions. Notably immovable are taxes, which last year absorbed 11¢ on every dollar of gross railroad income, and wages, which took 48¢.

Wages have risen in the past few months and apparently will go still higher soon. To the many pre-1954 boosts, the rails have this year added another $300-million (BW—Sep.4'54, p52). On top of that, four unions representing 300,000 workers have asked to have their contracts reopened, and a fifth is expected to follow suit.

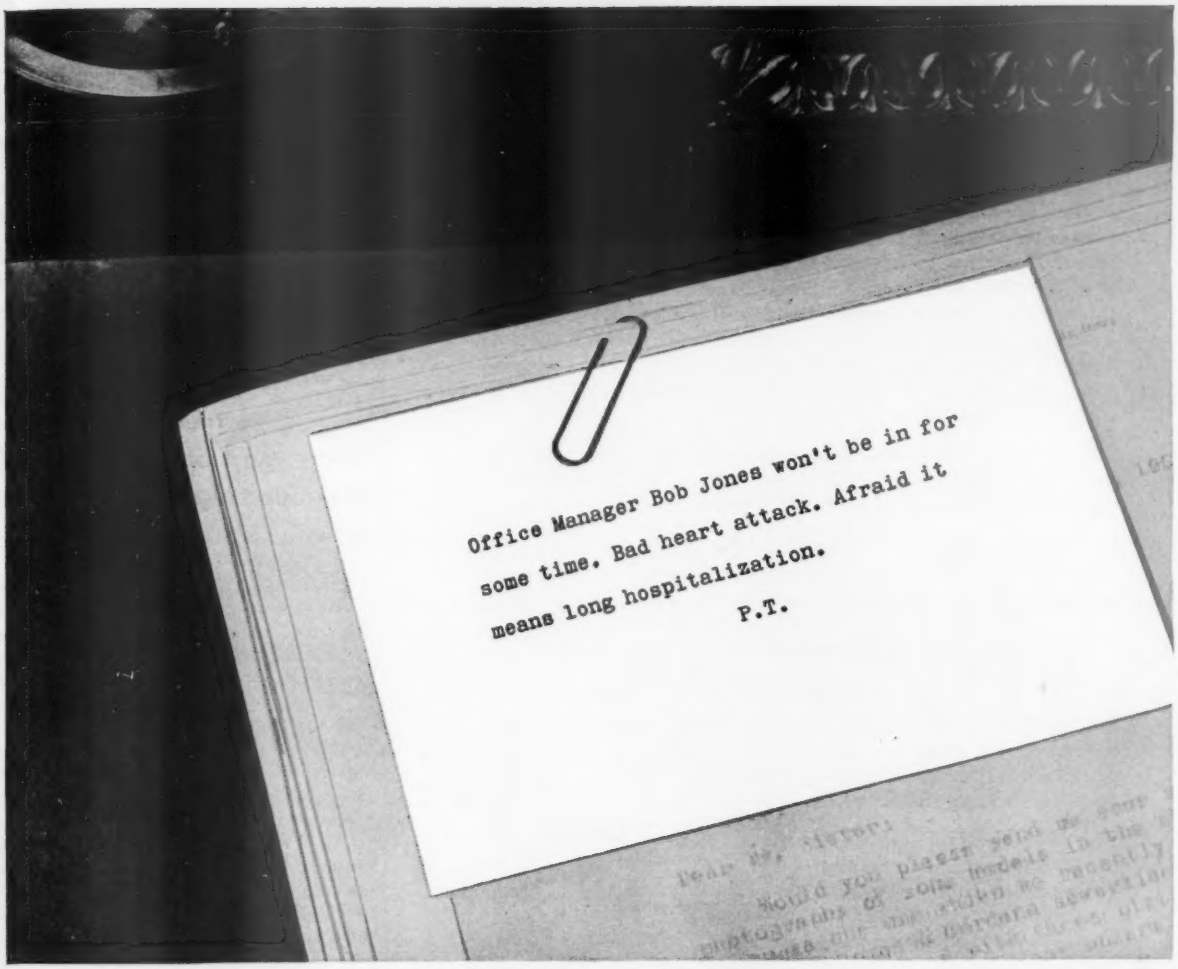
Massive increases in passenger fares have offset some of the postwar rise in costs, but they have failed to keep pace by more than half. Thus 1953's gross was $4.3-billion ahead of 1929, yet net was $22-million less.

• **Losing Caste**—The rate boosts have not been an unmixed blessing. Partly at least because of them the railroads are no longer cock of the transportation walk. Since 1929 industrial production has more than doubled, but the railroads' freight ton-miles rose only 45%. In the same period, passenger traffic fell off 40%, in the face of swiftly rising population.

The blows of adversity have hit different carriers with different force. You can see that reflected in the Big Board trading, where some rails have soared while others have failed to regain their 1946 bull market peaks, despite the buoyance of prices as a whole.

• **Whose Ox?**—It's not just the holder of railroad securities who has a stake in the well-being of the trade. Very large numbers of businessmen have the rails as big customers, directly or indirectly. How big the customers are, of course, depends on how the rails are doing.

Last year, the rails paid $5.3-billion in wages, $716-million in interest



HOW YOU CAN HELP YOUR EMPLOYEES MEET MAJOR MEDICAL EXPENSES

Equitable offers management a way to lighten the burden of ruinous medical bills for its employees

A heart attack...cancer...a bad accident. These *can* happen to your employees and their families!

A prolonged illness or a serious accident can pile up staggering medical bills. As a result, an employee who returns to work deep in debt may be distracted and worried—unable to keep his mind on his job.

The problem management faces

Modern management—in cases like this—is sympathetic and understanding...and aware of a fundamental obligation.

Equitable offers an answer: three basic Group Major Medical Expense Plans, any one of which can be adapted to your company's needs.

This type of protection is vital, *whether or not* your employees are now covered by the usual medical and hospitalization plans.

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The cost of this insurance is amazingly low compared to the protection it gives you and your employees.

Your Equitable Representative can help you bring to your employees —and to yourself—peace of mind. The Equitable also offers *Individual* Major Medical Expense Policies, for both you and your family.

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ON THE PACKAGING NEWSFRONT

A New England seafood shipper is experimenting with a **new** package for shipping lobsters and **anticipates a saving of more than 50 percent.** Previously he packed the lobsters only in barrels, which were placed in larger barrels containing ice. In the experiment, he is packing them with damp sea weed in an air-tight metal container which is placed, with ice, **in a special Bemis Multiwall Paper Bag.** The bag, made of wet-strength paper that will not disintegrate from the moisture, is closed with a wire tie.

In shipping live lobsters, their shells must be protected from breakage or the lobster will die, and the fresh water from melting ice must be kept away or they will drown.

The Bemis bags cost less than 20 cents each and the metal containers about 50 cents. Barrels for a comparable shipment **cost about $1.75.** The shipper has also found that **labor costs are less** with the new bag method, and he has the advantage of a **considerably lower tare weight.**

Cutting labor costs for wrapping his product **from $1.67 per unit to only 4 cents** was the accomplishment of a Chicago manufacturer of coin-operated telescopes who switched to large **Bemis Paper Bags.**

This manufacturer, who sells his product to amusement parks, resorts, hotels, airports, etc., **previously wrapped the telescopes in kraft paper** as protection against dust and dirt before shipping and against crate scratches during shipment. **Labor time was 20 minutes per unit.** In contrast, **it takes only 30 seconds** to slip a Bemis Bag over the telescope and it is a much neater package. Costs of the wrapping paper and the bag are approximately the same—about 36 cents.

The extraordinary saving made in this application is encouraging the use of **large paper bags as covers for machinery, large appliances, etc.**

Whether you need a package that will **increase sales, give better protection to your product, or simply save you money** . . . or if you are interested in other of our new developments . . . consult us. Bemis products meet an astonishing number of commercial and industrial requirements. You may want Bemis engineers to **create a new package or to advise you on packaging methods.** Please write us.

Bemis **408 D Pine Street**
St. Louis 2, Mo.

and dividends, $2.8-billion for fuel, forest products, iron and steel, new equipment, and other supplies.

That spending is bound to be way off in 1954. One omen of this appeared last week in a survey of business spending on plant and equipment put out by the Commerce Dept. and the Securities & Exchange Commission (BW—Sep. 11'54,p26). The survey showed that the rails are expected to spend only $851-million for such purposes in 1954, a drop of 35% below last year.

Sorry States

They need more revenue. Most of them will seek it through higher, wider taxes on sales, income.

State officials in all sections are on their annual prowl for new sources of revenue.

Against a backdrop of steadily rising costs, the states are scratching for the cash to pay for new schools and institutions, highways, and all the rest of public works. Welfare programs and state aid to communities are being widened; payrolls are rising with the increased activities.

As a result, the states had to borrow money to keep going, although their over-all tax revenue for the year ended June 30 was over $11-billion, a rise of nearly 5% above the previous 12-month period (BW—Sep.4'54,p70).

In calendar 1955, there are 44 state legislatures scheduled to hold regular sessions, with money problems prominently featured on the agendas. If 1954 action is a reliable key, the trend will be mostly upwards. Only a few legislatures have met this year, but five of them—Arizona, Colorado, Kentucky, New Jersey, and Texas—passed laws aimed at significant revenue boosts. Massachusetts alone moved in the opposite direction, lowering the state income tax.

• **New Sources**—The general sales tax is a favorite area with the prospectors for new revenue. Such taxes are levied now in 32 states, of which nine have joined up since 1947—Connecticut, Florida, Georgia, Maine, Maryland, Pennsylvania, Rhode Island, South Carolina, and Tennessee. Next year, new sales taxes will be considered by Idaho, Massachusetts, Minnesota, Nebraska, New Hampshire, New Jersey, Vermont, and Wisconsin. In 1956, Kentucky and Virginia may study similar laws.

Arizona, California, Illinois, and Mississippi are planning to boost the rates or widen the coverage of existing sales taxes next year. In Pennsylvania, where

where there's **ELECTRICAL POWER**

The mining industry is one of the biggest users of Okonite cable for both underground and surface operations. Cables for shovels like this operate at 5,000 volts, yet must also withstand frequent dragging, pulling and coiling as the equipment is moved over the rocky terrain. A cable that is engineered for the specific job becomes a key factor in reducing costly "down-time" on such expensive production machinery. Designing and making reliable electric cables has been Okonite's business since 1878. The Okonite Company, Passaic, New Jersey.

2525

. . . there's **OKONITE CABLE**

This announcement appears for purposes of record only.

562,994 Shares

Republic Steel Corporation

Common Stock

The Company on July 29, 1954 called for redemption on August 31, 1954 all of its 281,497 outstanding shares of 6% Cumulative Convertible Prior Preference Stock, Series A, which were convertible through August 31, 1954. Holders of 98.63% of these Shares exercised their conversion privilege and in exchange for their Shares have received 555,296 Common shares.

Pursuant to a standby agreement with the Company, the Underwriters offered during such conversion period to purchase any Preference Stock, Series A, tendered to them and to convert such Shares into Common shares.

Glore, Forgan & Co.

The First Boston Corporation — Merrill Lynch, Pierce, Fenner & Beane

Eastman, Dillon & Co. — Goldman, Sachs & Co. — Harriman Ripley & Co. Incorporated

Hornblower & Weeks — Kidder, Peabody & Co. — Lehman Brothers

Stone & Webster Securities Corporation — Union Securities Corporation — White, Weld & Co.

September 7, 1954.

Well Stacked! Use your air space from floor to ceiling to stack materials on E.M.I. racks. They save valuable floor space, protect workers and stock, and speed up materials handling. Low-level stock is never tied up. Stationary or portable racks fabricated of strong, square tubular steel are available to stack most materials. Sections can be adjusted to fit any space or unit load. E.M.I. engineers will design special racks for your materials.

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WRITE FOR NEW CATALOG

- Pallet Racks *(Illustrated)*
- Portable Stock Racks
- Coil Racks
- Drum Racks
- Special Racks for All Applications

a 1% retail sales tax is due to expire next August, the legislature will consider an extension, and a possible rate increase.

• **On Income**—As for state income taxes, the picture is a mixed one. Bills to reduce the state levies will come up in many legislatures next year, some with a chance of success. But other states may increase rates; still others, now without income taxes, may turn to them. For the states as a whole, taxpayers are likely to suffer a slightly larger extraction during the year.

Three states—Arizona, Colorado, and Kentucky—have turned to the federal idea of withholding income taxes.

Among the miscellaneous levies, rises are more likely than drops in gasoline, cigarette, and alcoholic beverage taxes. Kentucky and New Jersey this year boosted their cut on pari-mutuel takes; other states may tag along.

FINANCE BRIEFS

U. S. demand for paper by 1980 will reach 100-million tons a year—around four times what it is now—says Frank C. Ash, president of Oswego Falls Corp. Paper and paperboard production last year hit a record 26.6-million tons (BW—Sep.11'54,p134). Paper needs of a family of five today, says Ash, would fill a one-ton truck; by 1980, they will fill a 2½-ton truck.

•

First trading in Southern Bell Telephone & Telegraph's 35-year 3⅛% debentures was at $1,016.25 per $1,000 bond—or a yield of 3.04%. Southern Bell offered $55-million of the bonds to the public early this month at a price yielding 3.01% (BW—Sep.4'54,p128). The free market price seems to strengthen the feeling that borrowing costs are moving up, that even top quality bonds will yield 3% or more.

•

Eastman, Dillon & Co. has placed $20-million of Spartan Aircraft Co. 15-year collateral trust notes, due August, 1969, with nine insurance companies. The companies include Northwestern Mutual Life Insurance Co., John Hancock Mutual Life, Massachusetts Mutual, Connecticut General Life, Lincoln National Life, State Mutual Life Assurance Co. of Worcester.

•

Chesapeake Industries (BW—May8'54, p156) may soon add banking to its already varied stable of interests (film processing, real estate, steel fabricating, and oil machinery). It's now negotiating to acquire one of New York's smaller banks, Colonial Trust Co., which has resources of $61.5-million. The deal would call for an exchange of stock.

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RICHARD B. KAHLE
PRESIDENT

March 16, 1954

Mr. George R. Brown
Executive Vice President
Brown & Root, Inc.
P. O. Box 3
Houston 1, Texas

Dear Mr. Brown:

The rehabilitation of our alkylation unit and its conversion from hydrofluoric to sulfuric catalyst type was completed by your people last month and put into immediate operation. The work was finished in a hundred and one working days from the date you were given the contract.

This work, I believe, sets a record in two cases: first, in time of completion; and, second, in the fact that the plant started up immediately on completion, was gradually brought up to capacity, is running at more than designed capacity, is running at full designed specifications and has required no substantial change of the equipment as completed.

As I told you shortly after this job began, it was of great importance for us to finish it promptly and have it in operation at full capacity immediately upon completion. You personally stated that you would do everything you could to expedite the completion and that it would be a good job. You have certainly complied in both instances.

I want to thank you personally, and for my associates in the company, on the job you did for us and I wish you would convey to your associates who worked on this construction, our grateful appreciation and thanks.

Sincerely yours,

R. B. Kahle

we gave them back six months and a half-million barrels of gasoline

The new Eastern States Petroleum Company's aviation gasoline refining unit chalked up another rapid completion for Brown & Root. The plant was finished in the record time of 101 working days . . . cutting more than six months off normal construction time.

Early completion of a project means a bonus of unexpected production which, in the final analysis, represents a gratifying reduction in plant cost.

If your organization plans construction, contact Brown & Root. Planning experts will be put at your disposal . . . no obligation, of course.

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A garden-girt suburban mansion, amply supplied with automobiles and telephones, can work fine as a home for a New York financial house. Hugh W. Long & Co. has been proving that for two years, managing a stable of four growing investment funds in this stately Elizabeth (N. J.) mansion—where it fled from a threat of higher New York taxes. A fleet of cars carries the brass back and forth to Wall Street. Pres. Hugh W. Long also supervises the flowers, tended for the past 20 years by a gardener who came with the house.

(Story continues on page 160)

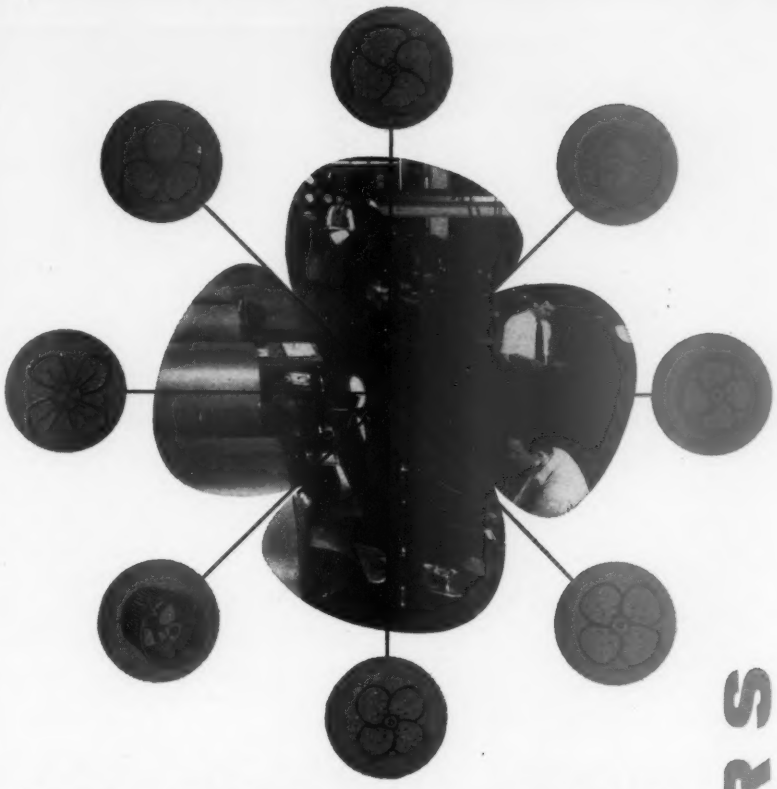
Flowers, Low Taxes—Investment Hous

OLD DINING ROOM is used for research staff conferences. Staffers like these say they work better in the suburbs, with fewer interruptions, more time to think.

ATTIC houses writers, some clerks. Here orders for new shares are sorted.

ous Finds Eden

CELLAR houses mimeograph, where preserves and junk once lurked.



AIR CENTER, U.S.A.

This modern research laboratory might well be called AIR CENTER, U. S.A., for it is here that experienced engineers design and test the Torrington fan blades and blower wheels which are at the very heart of the nation's leading air-moving appliances. Here, too, manufacturers find expert assistance on any design problem concerning air flow, sound and vibration.

Torrington's unique research service has helped many manufacturers improve the performance of their units *without cost*. And Torrington's modern methods, flexible schedules and expanded productive capacity provide greater efficiency, faster production and reduced costs.

If you make or plan to make heating, ventilating or air conditioning equipment, put Torrington to work for you. No one has more experience in the design and production of air impellers than Torrington.

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AIR IMPELLERS

This kind of LEG WORK is easy!

United-Carr's latest fastener for K-D (knocked down) furniture allows even tables with Duncan Phyfe-style legs to be shipped in a flat carton. Parts are simply snapped together, without tools, in store or home. Result: Manufacturers cut assembly and shipping costs; retailers eliminate delivery costs and save storage space; customers benefit from lower prices. With all this, it makes a stronger table, too.

For the furniture industry and for the leading manufacturers of automobiles, aircraft, electronic apparatus, appliances, clothing, United-Carr designs and produces specialized fasteners and allied devices *in volume.*

Lower costs, speedier assembly and, in many cases, improved product performance demonstrate that it pays to call in United-Carr—FIRST IN FASTENERS.

Consult your nearest United-Carr field engineer before your new designs crystallize. It is during this all-important planning phase that you can make best use of our specialized services.

UNITED-CARR

United-Carr Fastener Corp., Cambridge 42, Mass.

MAKERS OF DOT FASTENERS

SHADY LAWN of Hugh W. Long & Co.'s mansion-office provides a fine conference room for directors W. G. Grady, Jr. (left) and W. Emlen Roosevelt.

INVESTMENT HOUSE FINDS EDEN

(Story starts on p. 159)

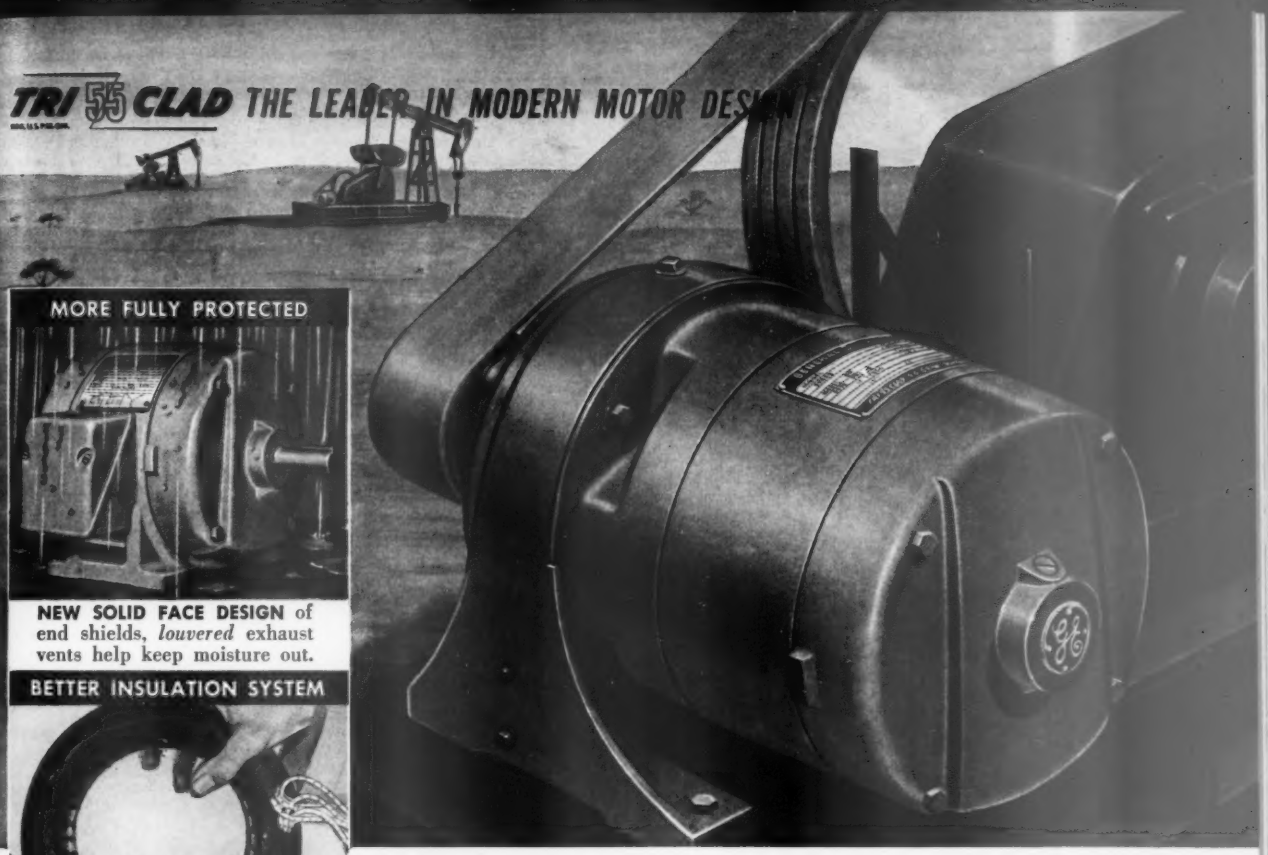
Whenever New York City sharpens its tax hatchet to chop a few more dollars from the city's corporations, Wall Street businesses are among the first to threaten to flee the grasping city. These outcries were particularly agonizing two years ago, when the rate on gross receipts of financial business was doubled—and one investment house actually decided to stop threatening and move.

Hugh W. Long & Co., which manages four investment funds worth about $295-million, decided that the $188,000 tax at the new rate was too high a premium to pay for a Wall Street location. Long's operation was not so closely tied to the securities markets as a business that is constantly trading securities for customers' accounts, so it could pull up stakes without too much shock.

The company had been eying out-of-city sites for some time. Finally it decided on Elizabeth, N. J., which has good transportation facilities, and a low tax rate. One of the company's directors, W. Emlen Roosevelt, was a long-time Elizabeth resident. He scouted out the handsome Georgian mansion at the corner of Parker and Westminster Streets, and started the wheels turning to move the company in before tax deadline.

• **Zoning**—There were plenty of problems before the company could get its 75 employees and 18 van loads of equipment and furniture across the Hudson. A big one was getting the zoning ordinances revamped to permit Long to operate in the quiet residential area. Roosevelt handled this, and eventually won over even the Protestant minister who spearheaded the opposition. By the time that zoning and other hurdles had been cleared, only 12 days remained to remodel the main house—and the smaller one next door which now houses accounting equipment and the telephone switchboard. The company's secretary, Thomas F. Chalker, crammed 78 workmen into the 50-year-old three-story house, for partitioning, painting, and rigging. The face-lifting was complicated by the necessity to pacify the neighborhood by keeping as quiet as possible; the midsummer work was carried on with all the windows closed.

Today, Pres. Hugh W. Long looks on the whole thing with satisfaction. He grants the inconvenience of keeping close contact with Wall Street, but finds plenty of offsetting advantages. The company's officers and staff—most of whom are Jerseyites—find they accomplish more, have fewer interruptions in their new home. And Charles J. Vollhardt, vice-president and treasurer, figures the company has saved about $340,000 in taxes by being in Elizabeth despite the fact that New York called off the tax boost that caused the move. Long points out that there's no telling what the New York State legislature may do in the future to keep the city solvent.



MORE FULLY PROTECTED

NEW SOLID FACE DESIGN of end shields, *louvered* exhaust vents help keep moisture out.

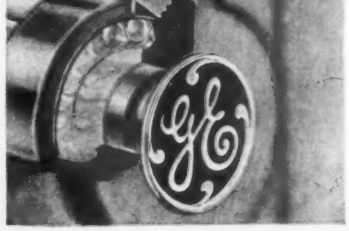
BETTER INSULATION SYSTEM

SILICONE RESIN COATING, Dri-film*, makes insulation shed water—lengthens its life.

NON-WICKING LEADS

PERMA-NUMBERED LEADS won't wick water into the motor—assure quick identification.

LONGER MOTOR LIFE



NEW BEARING SYSTEM means the G-E motor runs longer without relubrication than any other.

Now, important advances in motor protection...

New TRI 55 CLAD motor gives you longer motor life...outdoors or in!

REG. U.S. PAT. OFF.

Here is a dripproof motor that can be properly applied to outdoor applications like oil well pumping. It's the new G-E Tri/Clad '55' motor with more physical protection . . . more electrical life.

Here are some of the protection features that add to the life of this new motor. End shields and frame are rust-resistant cast iron. Air vents are protected at the base of the end shield—not exposed on the face. Side exhaust vents are *louvered*. To help prevent moisture damage, the insulation system of the new Tri/Clad '55' motor incorporates newest materials like a silicone stator coating and polyester-film for slot and phase insulation.

The new Tri/Clad '55' motor is simple for you to install. Diagonally split conduit box offers ample knuckle room and leads are permanumbered for instant reading. Stainless steel nameplate carries wiring diagram. Lock-in screens for rodent protection are available.

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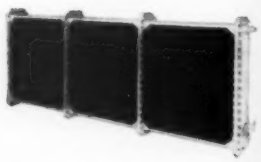

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INTERNATIONAL OUTLOOK

BUSINESS WEEK
SEPT. 18, 1954

Western capitals are less glum this week about finding an alternative to the European Defense Community.

Foreign Secretary Anthony Eden seems to have a formula to resolve the crisis. You will have to wait, though, for a special nine-power conference before you can be sure he has the answer.

The Eden plan has not been spelled out publicly yet. But it seems to boil down to two proposals:

- **West Germany and Italy** would be brought into a revamped Brussels pact—a defense arrangement signed in 1948 between Britain, France, and the Benelux countries. This would be a looser arrangement than EDC, but would have the advantage for France of bringing the British in as an offset to the Germans.
- **West Germany would join the North Atlantic Treaty Organization,** but only after NATO had been given more control over European forces and military production.

Under this scheme, Britain would be tied a lot closer to the European continent than it has been under NATO.

This involves a real shift in British policy—one that wouldn't have come unless Churchill and Eden had decided that there was no other way to keep the Western alliance from falling apart.

Still, the Eden plan is not so far from the original British idea of how to organize European defense. Until EDC took shape, and with it the scheme for a tight political and economic union, the British were ready to tie themselves closer to the continent.

It's too soon to tell how the French, German, and American governments will react. But you can see certain positions shaping up:

- **Mendes-France probably will keep insisting on tighter controls** over West Germany. He won't get all he wants. But he can't afford to reject the British initiative. Ever since EDC was defeated he has been playing for British support.
- **Adenauer will try to salvage** as much as he can of his European-unity policy. But he can't O.K. limitations on German rearmament that don't apply equally to France.
- **Washington is over its initial peeve with France,** no longer talks of a U. S.-German tie-up that would exclude the French. It will back the Eden plan as long as it gives Adenauer political elbow room and provides for a real German military contribution.

—•—

The British won't be making any promises on convertibility at the upcoming session of the International Monetary Fund. In fact, London has had second thoughts about any early move to make the pound convertible into dollars (BW—Sep.4'54,p120).

When he's in Washington, Chancellor R. A. Butler will be pressing for:

- **A hard and fast agreement from the IMF to provide standby reserves** for convertibility if and when it comes. (The British are counting on the right to draw up to $1.3-billion from the IMF.)
- **Assurance from the Eisenhower Administration** that it will fight for a

more liberal tariff policy. Butler will argue that the dollar gap is being closed today only by heavy U. S. military spending plus defense aid.

Butler may add that he can't fix a date for convertibility until the direction of U. S. trade policy is fixed. But this will be less than the whole truth.

There are two other important reasons for Butler's hesitation:

- Growing opposition among Conservatives in Parliament who reflect the opposition of British industry to any freeing of imports.
- Fear of the political hay the Labor opposition could make if convertibility is tried and then flops.

—•—

A serious political crisis is brewing in Indonesia.

The Moslem party, Indonesia's biggest, is up in arms at the way the Nationalist government is playing footsie with the Communists both at home and abroad (BW—Sep.11'54,p144).

Moslem leaders called this week for an anti-Communist front. The move was precipitated by the arrival of a Soviet ambassador with an unusually large staff. (This is the first time Moscow has had an ambassador in Jakarta.)

—•—

Don't be surprised if the Russians build a steel plant in India, make a big propaganda splash in Asia in the process.

Moscow has made New Delhi a proposition for a 500,000 ton-a-year plant, which would involve an initial investment of about $75-million. Apparently Soviet financial terms are pretty favorable.

The offer is taken seriously in India by government officials and industrial leaders. Both agree that India needs more steel capacity, but can't hope to build it without foreign financial help.

The decision may depend on the report turned in by an Indian delegation which is now touring Soviet industrial centers.

—•—

There's trouble in the world of copper. Strikes at domestic and Chilean mines have been pestering producers for nearly a month now.

If close-downs continue much longer, copper users here and in Europe (where demand has soared recently) may be strapped for supplies as the fourth quarter wears on.

—•—

The situation in Chile seemed downright ugly this week. As of Wednesday all three big U. S.-owned mines were struck. That means 30,000 tons of copper a month.

For Chile, that's a loss of millions of dollars monthly. Even before the strikes, Chile's wildly-inflating economy was in serious straits (BW—May22 '54,p162).

There's an atmosphere of crisis in Santiago. President Ibanez has asked for drastic emergency powers to halt the strikes, which extend far beyond the copper industry. And he's drafting strikers into the army.

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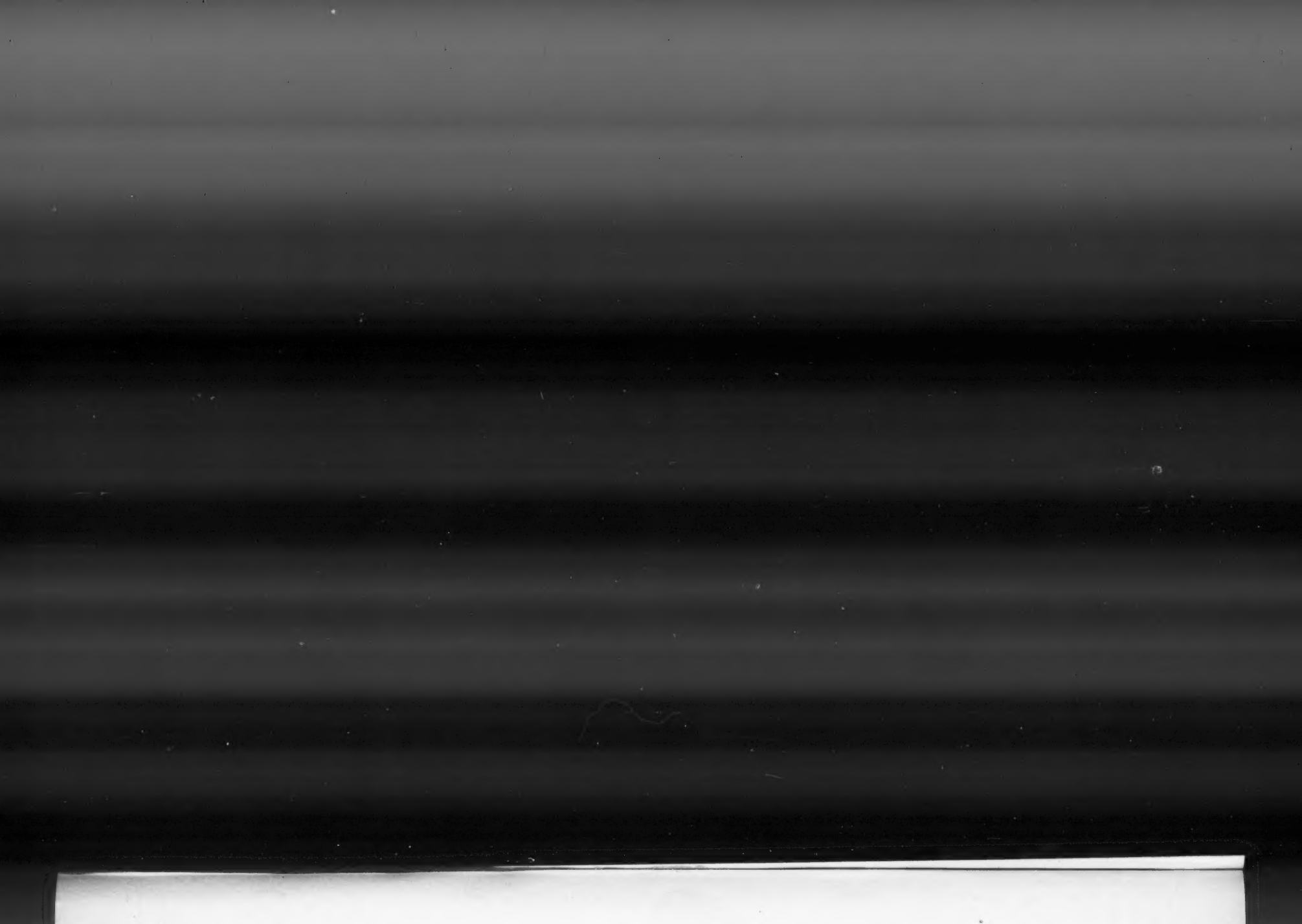

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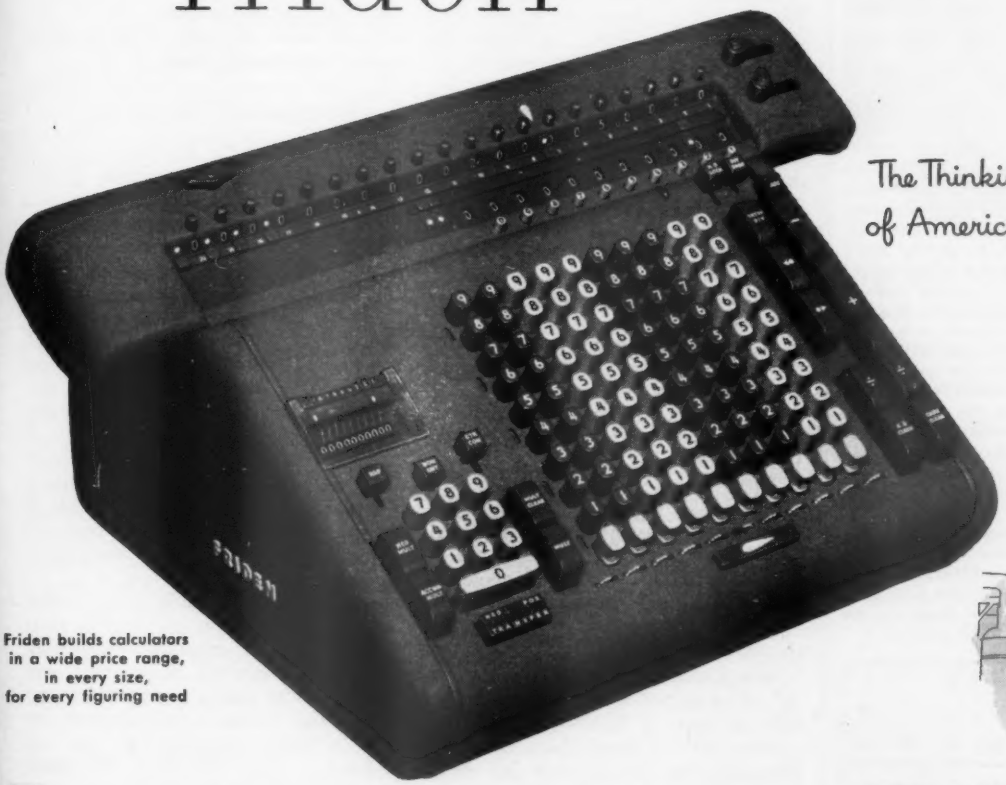

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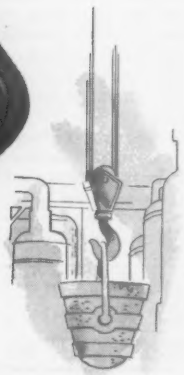

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Needed: New Kind of F

● Conditions have changed since the days of the Marshall Plan and Point Four. But U.S. officials say the need is no less great.

● Washington is looking for a new plan to restore U.S. leadership in the free world.

● Politically, though, it's an uphill fight. The pressures at home are for less aid, not more.

Seven years ago, Communists ruled the streets of Paris and Rome and held key spots in government. Germany was rubble and torn flags. The British—cold, dispirited, and dead-broke—were in no mood to take on more responsibilities. The victorious American armies had gone back to college; the victorious Russian armies, still intact, sat in the middle of Europe. It looked as if the Red tide could easily sweep to the Channel, or beyond.

Against this background, the Marshall Plan was born. U.S. dollars, food, machines, and productive skills pumped up the collapsed economic arteries of Western Europe. Our allies revived, and the cold war was on.

• **Success**—For seven years, U.S. foreign aid—in goods, in guns, in technical assistance—continued to flow into the battle against Communist expansion. Under the Marshall Plan and Point Four, U.S. taxpayers have put up $33-billion for foreign grants from 1948 to date.

These plans worked. Except in China, which was virtually lost by the time our aid began flowing, we held Communist power within its end-of-war limits. We even scored a couple of points: The Reds were beaten out of Greece, and Yugoslavia crossed over to the West.

• **New Crisis**—Today the Communists are trying to expand again, though by different means. Within the last two months, half of Indo-China has been lost, and the rest of Asia has been politically besieged by the Communists. The plan for European Defense Community, which was to have spliced German strength permanently into the West, has fallen through. Worse still, allies all around the world are getting restive under U.S. leadership, getting more ready to pull out of the cold war and appease the Kremlin.

In this new crisis, U.S. officials are searching for a new foreign-aid approach to rally the free world. They want a bold new economic plan that can capture the world's imagination as the Marshall Plan did. Used for world development, U.S. wealth is our most obvious advantage over the Communists. Not so used, these officials say, it is our most conspicuous handicap in a poor and envious world.

I. Change of Climate

The stage setting for foreign aid is now quite different from that of the Marshall Plan and Point Four act. New elements include Russia's entry into the atomic weapon race, the end of shooting in Korea and Indo-China, the tapering of our own postwar boom.

These factors have changed the thinking of our allies and the neutral countries. Now they are more scared of a third world war, in which the alphabet bombs would be flying in both directions. Now they are less scared of localized Communist aggression. Now they are more eager for world markets—which the Communists can provide at a price—and for long-term economic development—which the Communists can promise.

An Administration official sees it this way: "Everybody in the world fears war and wants economic expansion. The Communists talk peace, trade, and prosperity for everyone once they get rid of the American warmongers; we talk military preparedness, set off H-bombs, raise the duty on Swiss watches, and preach sound and cautious monetary policy. Who gets the votes?"

That's why Washington has begun to search for a foreign economic policy that would symbolize peace and economic expansion under American leadership. The Administration is aware of disintegration of free world unity and of the waning power of the U.S. to halt it. The feeling is growing in Wash-

Foreign Aid

ington that the initiative can be ours again only if we do something big, new, and dramatic.

II. Prescription

This feeling hasn't jelled yet. But a group of experts on foreign affairs have a general idea of the type of program that's needed now. It is based on recognizing two new facts:

The industrial nations of Europe, and Japan too, no longer need financial assistance primarily. Their big demand is for expanding markets that can assure their people of full employment, economic security, a rising standard of living. Their fear is that the free world market won't stay large enough to meet their needs. That's why they cast sheep's eyes at the hungry markets beyond the Iron Curtain.

Underdeveloped nations of the world need production, modern economies. Their weak governments must compete with the showy examples of the forced economic development in Russia and China. To compete successfully, they need a lot more capital.

Development isn't all they need, of course—they also want independence, self-respect, and other intangibles—but that need is real and pressing. And it's the need that the U.S., the world's wealthiest country, can most readily satisfy.

• **In Sum**—Put these two kinds of demand together and you have the outline of a new foreign economic policy: a vast, long-range development program in the underdeveloped countries, with Western Europe and Japan cut in for a fair share of the resulting business through a pattern of triangular trade.

Instead of a stagnating or contracting world economy with an increasingly fierce battle for markets, this program would aim at a steadily expanding world economy with room for growth for everybody, including the U.S.

III. The Politics

Of course, the sense of a need, no matter how urgent, and the scratching of heads alone don't add up to a program. And the plain fact is that the government doesn't yet have a program. The gimmick, the new twist, the magic spark just isn't there. One thing is certain, though—no bold new foreign economic policy will gain any headway unless all of Pres. Eisenhower's personal popularity is thrown behind it.

Political and economic tides in the U.S. are running strongly toward cutting down our foreign commitments in general, and economic assistance in particular. Congress and the public seem to be thoroughly fed up with foreign aid. It would be politically hard to tell them now that after spending $33-billion on our allies we have to spend a lot more or they'll pull out of the cold war.

Now there's growing pressure from business, labor, and farm groups to channel any foreign aid more directly for the benefit of American pockets. It is these pressures that are chiefly shaping the foreign aid program now.

• **Shrinking Program**—From the beginning, a lot of Republicans have opposed using tax dollars for foreign aid. Appropriations have been cut from $6-billion in the 1952-53 fiscal year to $4.7-billion in 1953-54 and to $2.9-billion in the current fiscal year. Of this year's total, $506-million is economic aid, split into $184.5-million for economic development, $116.5-million for technical assistance, and $205-million for rehabilitating Korea.

However, there are some signs that the U.S. program is adapting to the changing situation in the world. The Administration has contrived to shift the aid emphasis from Europe to Asia—in keeping with its understanding of a changed problem. This year the Far East will get 50.6% of aid funds, compared with 38% last year. This is more in line with the idea of aid to underdeveloped areas. Also, the Administration won a free hand from Congress for the spending of $700-million (originally earmarked for the Indo-China war) for economic development in the Far East.

• **Keeping Dollars Home**—Meanwhile, pressure groups in business, labor, and farming are pushing foreign aid further from the kind of program the Administration is groping for.

This pressure is reflected in a number of ways: the three-year $1-billion program to dispose of farm surpluses abroad, the policy of buying more aid supplies in the U.S. and especially in depressed areas here (BW—Sep.11'54, p152), the Pentagon's consideration of a plan to shift NATO aircraft procurement from Europe back to the United States.

The big drawback to surplus aid schemes, according to our foreign aid experts, is that they play into the hands of Communists whose propaganda line insists that our foreign aid is merely a grandiose scheme to export our domestic economic problems through dumping.

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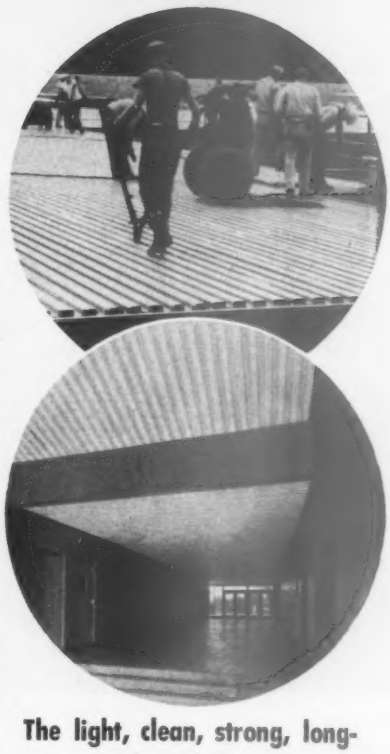

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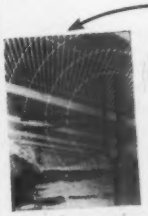

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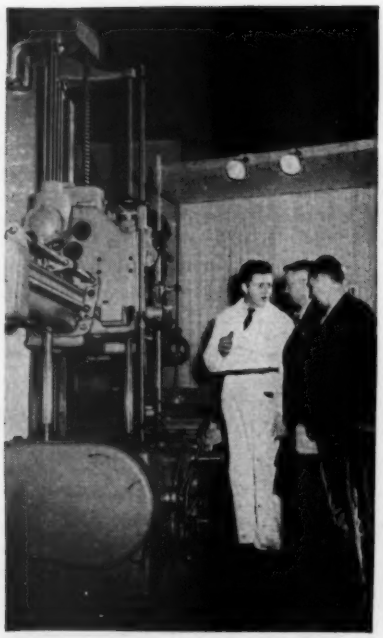
Ancient Leipzig, city of trade fairs since the Middle Ages, is now a showplace for Communist industry. Soviet and Chinese pavilions (right) dominate the 1954 midway. Thousands of loudspeakers urge expansion of East-West trade. It is more than a trade fair; it's a propaganda medium. This is the . . .

Leipzig Fair

In 1268, the Margrave of Meissen granted safe conduct to all who wanted to come to the great fair at Leipzig. For centuries after, merchants from all Europe and the Near East flocked to the Leipzig market shows, held in September and at Easter, to sell their wares and swap the commercial gossip of the day. Despite interruptions—a siege, perhaps, or an outbreak of plague—Leipzig remained one of Europe's leading showcases until World War II.

The Leipzig Fair, 1954, open last



BELGIUM, among 28 non-Communist exhibitors, shows a big boring machine.

EAST GERMANS trot out their industry's pride: Zeiss optical instruments.

RUSSIANS plug consumer items—above, a dress dreamed up in Moscow.

Fair Under Red Managers

week for a 10-day stand, is still an important showcase. And the visitor still has his safe conduct, this time by the grace of East German Communist satraps rather than the Electors of Saxony. But instead of a free exchange of goods and gossip, the fair is now a propaganda medium, in which the goods themselves seem almost secondary.

• **The Purpose**—Leipzig last week was the largest, most colorful show yet in Soviet Germany, if not in the entire Communist world. It gave a technical-minded BUSINESS WEEK editor a good opportunity to glimpse some strengths and weaknesses of Iron Curtain industry. And in its political aspects, Leipzig showed him the tenacity and zeal with which Communists are pursuing their ends.

The Leipzig Fair has a threefold purpose in the Communist scheme:

• Trade promotion: selling goods to non-Communists and receiving foreign exchange, or Western goods, in return.

• An attempt to impress unhappy

HUNGARY shows the latest in railroad yard switchers. Despite frequently shoddy engineering, Communist products show evidence of increasing cost-consciousness.

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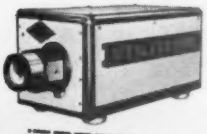

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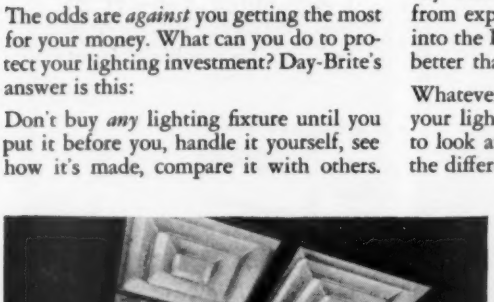

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East Germans with the wonders of the Communist industrial machine.

• A chance to plug "peaceful coexistence." By merely promising to increase East-West trade, Communists hope to break down what's left of the Allied strategic embargo, lure non-Communist businessmen into a mood of neutrality where business is business, despite the Iron Curtain.

In the case of India, East Germans offered a free pavilion, plus free transport of display goods from Geneva to Leipzig. Two German trade "experts" showed up in Bombay to "organize" the Indian exhibit.

• **Blue Book**—A U.S. trade fair typically concentrates on one thing—machine tools or plastics or motor boats. In the tradition of European exhibitions, Leipzig covers all kinds of goods.

The U.S. was not represented at the Fair. With that exception, the catalog at Leipzig looked like a blue book of the business world. Thirty-six nations exhibited; 28 of them from the Free World. Naturally, the Soviet Union, Red China, and the East German hosts took the largest space. China's hall looked like a mammoth pagoda; Russia's monstrous, vaguely Oriental white and gold pavilion is a sample of the new "Socialist" architecture common in Moscow. The captive countries of East Europe played second fiddle in smaller, consolidated exhibitions.

There was a big effort to impress fairgoers with the finer consumer goods rolling from Communist factories. Russia plugged small-screen television sets. Red China had motorcycles, decorated with an excess of chrome plating and artist Pablo Picasso's ubiquitous peace dove. Poland's biggest attraction was a small store where quarter-pound bags of real coffee sold like World Series tickets.

Among the Western nations, Britain trotted out the products of some of its most important industries. France, Belgium, Austria, the Netherlands, and West Germany had substantial displays.

• **Window-Shoppers**—There was little evidence of big business deals at Leipzig. Western buyers were window-shoppers—and not very impressed by what they saw. Usually, the Communist-made products were conventional, with few innovations, and hardly competitive by Western standards.

Outsiders were wary, too. While Russia and China now promise compliance with buyers' specifications, there are slips, especially in the satellite nations. Few have enough extra capacity to meet the demands of a large commercial order. Moreover, most visitors noted that Russia and other Communist nations were proclaiming their anxiety to buy the very products they were proudly offering for sale.

• **Standards**—Whatever their end use,

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Yes, there's high adventure ahead for you, if you take the challenge a flying career in the services offers now... if you're ready to be on your own.

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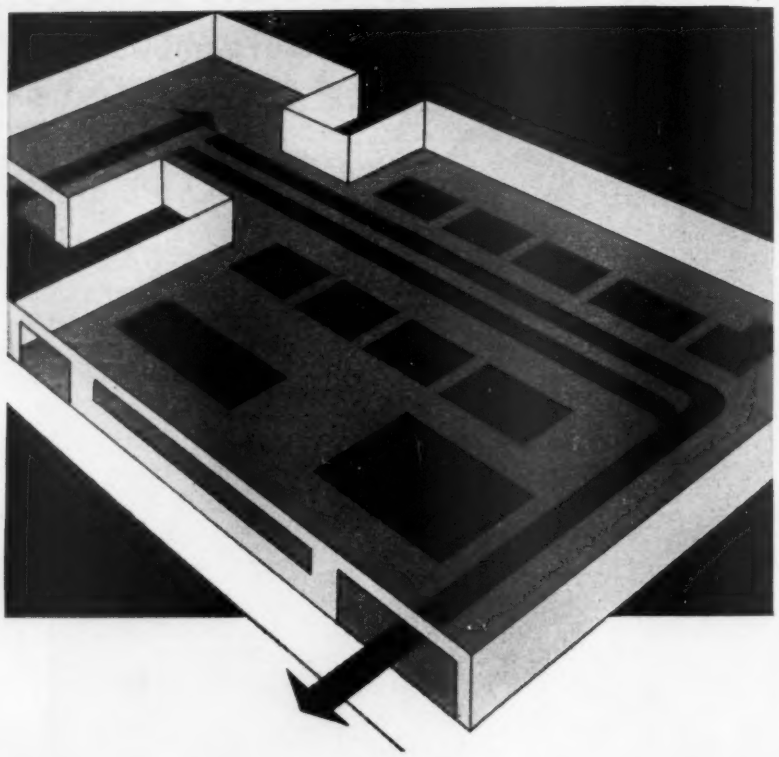

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Lay out your ideal production set-up. Then, select a Truscon Steel Building to enclose the space.

Truscon offers you a complete building design service, based upon the proper application of standard steel building products. Truscon will help design and engineer the building "package" you need to fit your new production flow. Truscon will deliver your building to your site and work with your local contractors to get it up and in use.

You get a steel building — or group of buildings — made exactly to your space needs. You get all the economies of standard prefabricated steel sections.

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the products on display at Leipzig do the job for which they were designed—but just barely. Like much of the Communist military equipment captured in Korea, industrial and consumer stuff at Leipzig showed shoddy engineering and extravagant use of production man-hours in lieu of machines. A high-powered transformer, for instance, showed signs of being designed with very loose tolerances; some seemed so wide that the parts were completely devoid of standardization. Such a machine doesn't have much safety margin in operation, and can't be run beyond the limits of its power rating.

This, to be sure, is no cause for Western gloating. When they have to, the Soviet world's engineers turn out good, serviceable equipment—for example the MIG-15 aircraft and its successors.

Communist designers are becoming more cost-conscious in their product engineering. But, to an American, it's hardly the right kind of cost-cutting. A Chinese telephone has a cheap, cloth-covered cable connecting the handset to the base. A medium-sized power shovel uses mechanical devices instead of hydraulics to operate the scoop and other digging tools. In both cases, money is saved. But later maintenance costs will wipe out the initial saving; the substandard parts wear out fast.

• **Extras**—Few Communist manufacturers give the customer anything extra for his rubles or zlotys. A Czech electric iron has no thermostat, temperature control, or steaming attachment. A high-powered transformer hasn't the internal hydrogen-gas cooling of, say, a Westinghouse unit. Costwise, the cooling unit is a small fraction of the price tag. But it lets you get a whale of a lot more work when you need it.

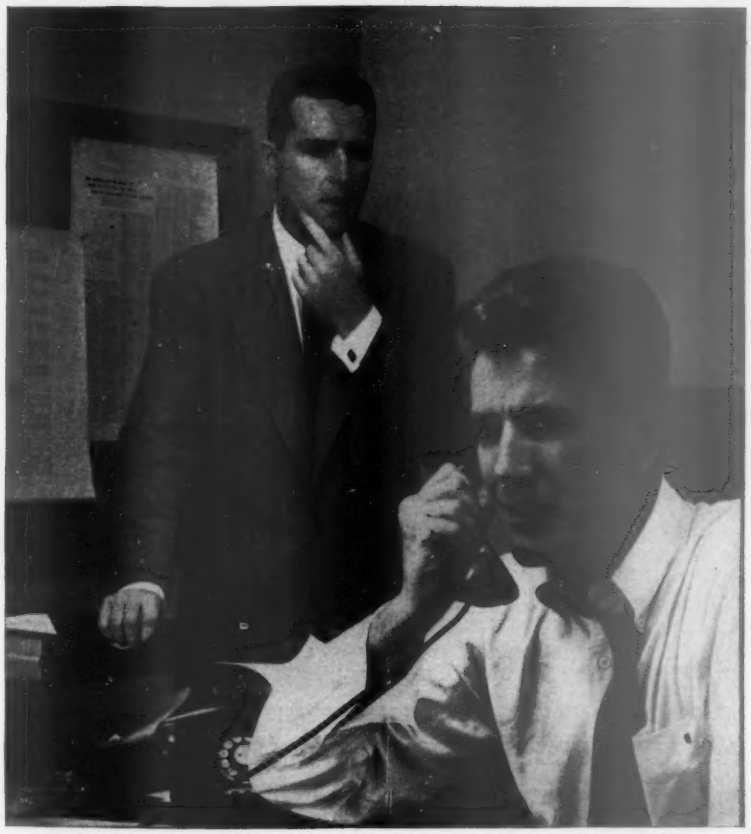
Styling, by and large, is hit or miss. Radio and TV sets showed only the barest hints of trying to appeal to the consumer. Usually there's a poor choice of colors, often clashing; decoration and trim is frequently excessive and inartistic to Western eyes.

• **The Blank Look**—For the U.S. visitor, Leipzig's fair provides a unique opportunity to see East Germany under Red rule. East German officials spared no effort to put a lot of sugar icing on a generally unappetizing cake. Extra rations, bands, white-tied waiters were imported from other East Zone cities; if they had the money, Leipzig citizens could buy things they've dreamed of for years—fresh peaches, for example.

But beyond the window dressing, the city had the look of George Orwell's imaginary 1984. The hierarchy of Soviet and East German Big Brothers stared and blared from every building and thousands of loudspeakers. People were dowdy and gray, beginning to wear the blank, withdrawn look that is the hallmark of a Communist society.

"Where's the fire?"

asked Jones, the editor



"A $500,000 blaze?" asked Jones. "And not a sprinkler in the place?"

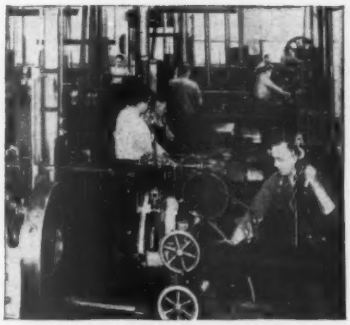
He stopped, then spun around to Frank.

"Without you, chum," said Jones, slowly, "that fire could be ours, or any of our readers'."

"Made me think twice," Jones wrote us later, "Frank's crew was installing one of your sprinkler systems in our office the day that warehouse fire broke out.

"I was plenty grateful we finally had fire protection of our own."

"What's more, I never missed a deadline," Jones wrote us, "throughout the installation. Your salesman, Frank, really figured the angles. He worked with your factory engineer who made a detailed working drawing locating every pipe and even the water supply. He also checked with the architect in terms of appearance. Then —



"Frank told me," Jones continued, "that your fabricating plant then put the drawings into action — cutting, threading, assembling and labeling the pipe according to the plan. All Frank's crew had to do was to put 'er up! That crew was practically invisible! Didn't get in our way at all! On top of this . . ."

"The reduction in our Fire Insurance Rates," Jones concluded, "is not to be sneezed at. And we like that Deferred Payment Plan, too." Whether your building's old or new — a factory, office or institution — our twenty-five direct factory offices, including fabricating plants, take 100% responsibility in installing Rockwood sprinkler systems. Interested?

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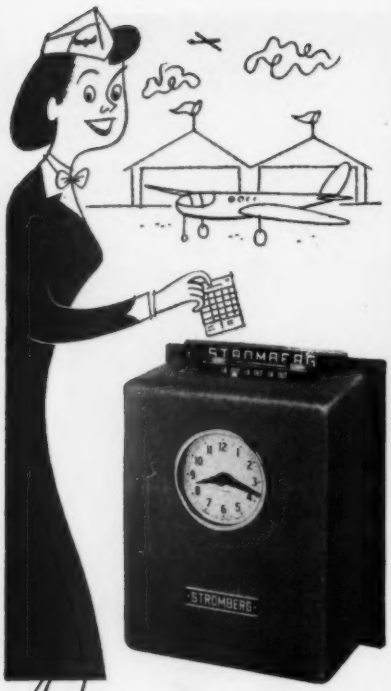

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An Oil Strike for France

Parentis is a magic word in France. Over the past four months, this little-known area in the province of Landes, 70 mi. southwest of Bordeaux (map), has gushed forth with what could be the most important oil development in Western Europe.

In Paris this week, Parentis' discoverer, Esso Standard S.A.F., is dickering with the government over plans for a new operating company to exploit the oil find. At Parentis, the company—81% owned by Standard Oil Co. (N. J.) and Gulf Oil Corp., the rest by Frenchmen—is drilling its fourth well, with hopes that it may be producing within days or weeks.

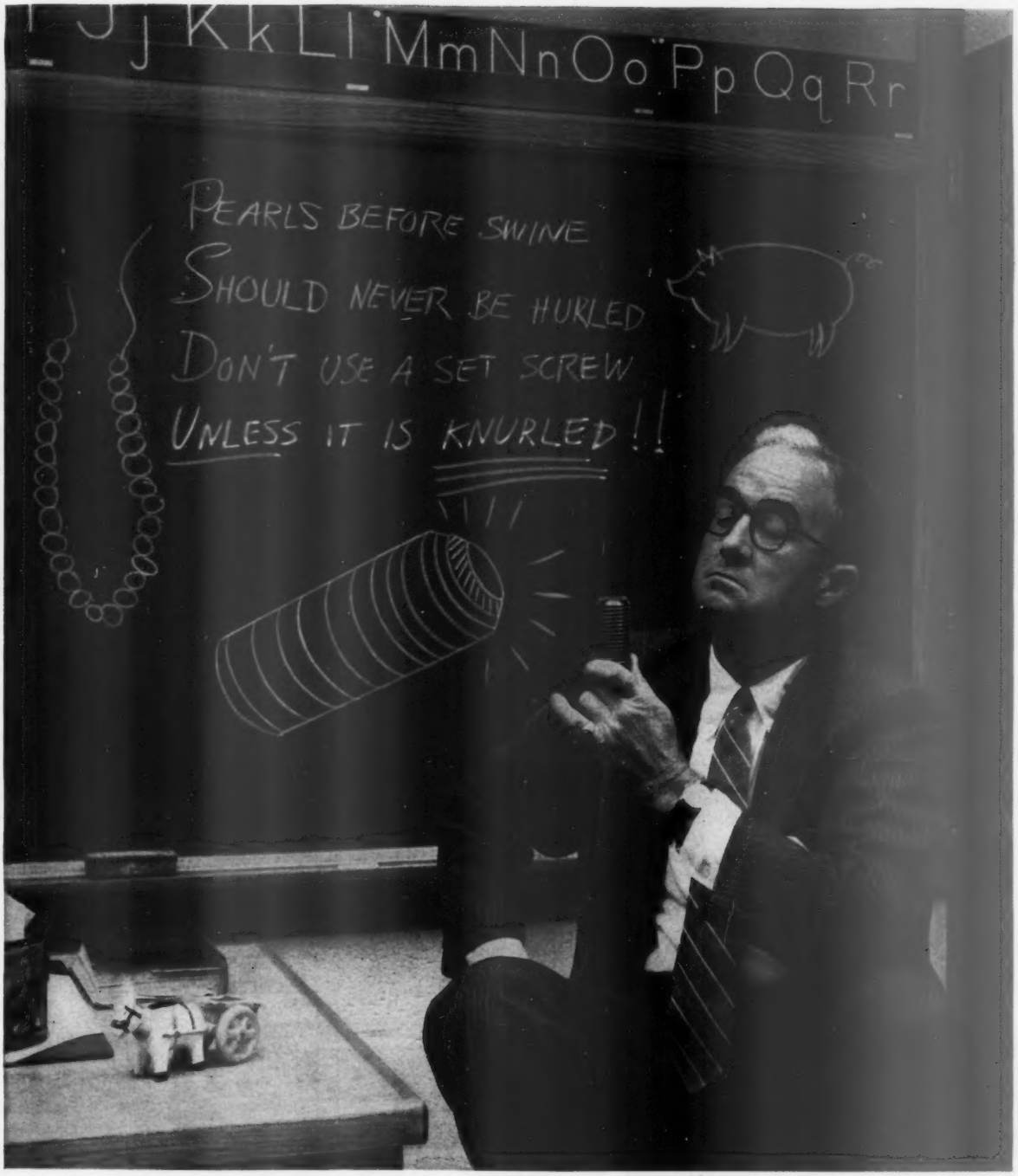
• **The Need**—Already, you begin to see the importance of Parentis for France. The discovery well (picture, above), brought in last May, is now producing 3,800 bbl. of high-quality crude a day. Total crude production in France has been just over 7,000 bbl. a day. In one swoop, Parentis I has increased French oil production by 50%.

While the French get some 4,000 bbl. a day from North Africa, with hopes of more from a new discovery in Morocco, their oil resources are a fraction of their needs. It costs France the equivalent of $500-million yearly—16% of all imports—to buy petroleum in the Middle East. Development of major crude sources at home or in overseas France would make a big dent in Paris' chronic payments deficit.

• **The Find**—Here is the Parentis story, which has been obscured by the summer's political excitement in France and by the natural reluctance of Esso Francaise to overestimate its results:

Since 1870, over 300 wildcat wells have been drilled in the Aquitaine Basin area, in southwest France. They have turned up salt, potash, some insignificant amounts of oil and gas. Just before the war, a gas field focused attention on the Parentis area. For 15 years, Esso geologists have insisted that the northern Aquitaine Basin should be productive. In 1951, they got a permit to explore for oil there. Parentis I, third of three Esso wildcats, proved their point.

Esso is now shipping Parentis I's



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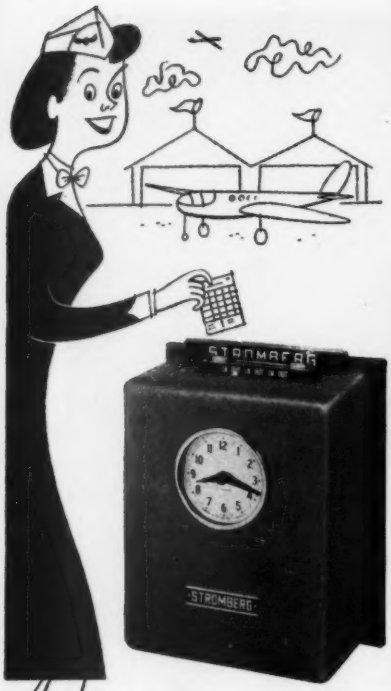

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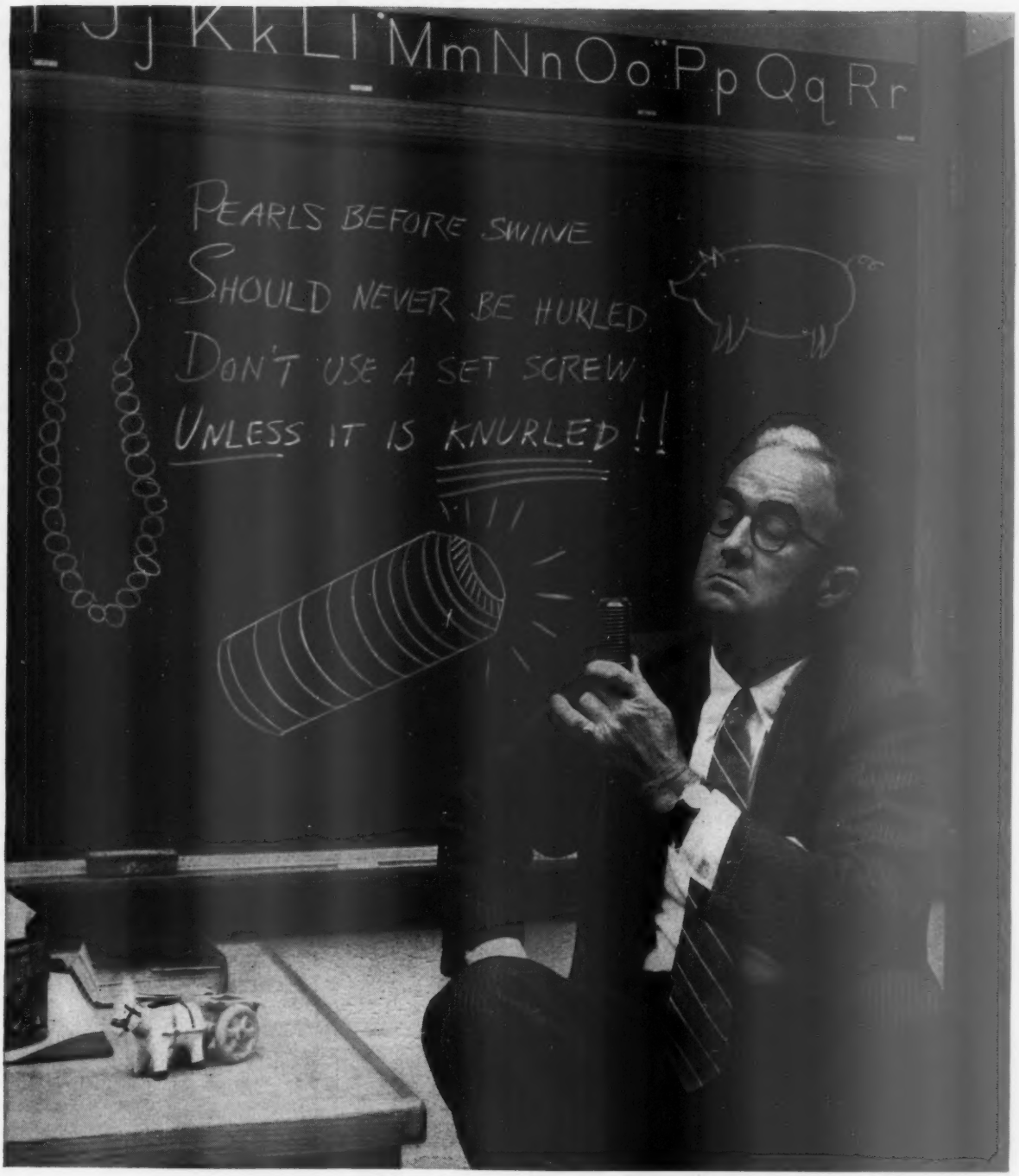

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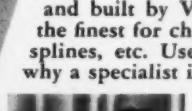

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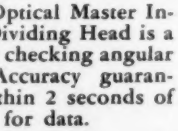
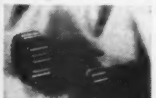


This universal gear rolling inspection fixture checks the concentricity, backlash and smoothness of the rolling action of gears.



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3,800 bbl. daily to its refinery at Port Jerome by rail. Parentis II has been declared a dry hole. Parentis III gave up oil mixed with water, but last week Esso people in Paris said that technical problems were overcome and that soon the well would produce without water. When it does, Esso counts on shipping perhaps 7,500 bbl. a day from its two producers.

Parentis IV is drilling now. Two more Parentis wells are located, preparatory to drilling. And Esso has asked for a government O.K. to start experimental drilling on a 4-million-acre tract close by.

• **Government**—Meanwhile, Parentis oil has moved onto administrative and political levels. Oil prospecting by private companies in France is under the hawk eye of the government's Bureau des Recherches de Petrole. The law says that the Bureau can buy a 10% interest in all oil producing companies. It has indicated it will do so in the case of Parentis, owning a 10th interest in a new company otherwise wholly owned by Esso Standard.

Esso executives in Paris won't say anything about the negotiations, beyond the fact that the government is "doing everything possible to expedite an early agreement." It's a complex affair: French mining laws are completely unadapted to the problems of oil production, royalties, and the like. Oilmen hope the government will keep the Parentis royalty rate low in order to encourage more private prospecting. Some of them have worried right along that three big state-controlled oil companies would take over the lion's share of new prospecting in the concession rush that has followed the Parentis discovery.

Other problems involve the French government's relations with its traditional crude suppliers abroad and the

The Pictures—Henry G. Compton—Cover, 70, 158, 159, 160; Christian Dior Hosiery Co.—106; Custer Channel Wing Corp.—28; Douglas Aircraft Co.—64 (bot.); Dow Corning Corp.—61 (bot.); Eastfoto—168, 169 (top rt., bot.); Edith Miller—66, 104; General Motors—56 (top); International Harvester Co.—56 (bot.); Bob Isear—96 (bot.); Bern Keating—64, 65; Herb Kratovil—122; Marshall Lackman—82, 83, 84; McGraw-Hill World News—169 (top lt.); Molco Drilling Machine, Inc.—61 (top); Taylor Instruments—64 (top); United Press—129, 140, 198; U. S. Army—26, 27; George Woodruff—186, 187; John Zimmerman—46, 47.

position of Esso Standard as a foreign-owned company.

Nonetheless, Esso people feel prospects are bright for a profitable agreement soon, and Paris observers reckon the discussions are well along. In fact, top company and government officials are concentrating now on a proposal for a $20-million-plus synthetic rubber plant, which has been encouraged by the oil strikes. There's unofficial talk of producing 20,000 tons of synthetic a year in Normandy near Esso's refinery, with Esso and the government's Compagnie Francaise de Raffinage heading a combine including eight other rubber and chemical companies.

• **Energy**—There's always the chance that Parentis and France's gathering oil boom will turn out to be a two-or-three-well flash-in-the-pan. But you can understand why it has caused so much excitement among case-hardened French oil authorities, by looking at the French outlook for energy production.

French coal is becoming harder to get, despite widespread mechanization; output sticks stubbornly around 1.5 tons per man-shift, and the price stays high. Hydroelectric power production has doubled since the end of the war; but the best sites are already utilized, and from now on hydropower will become more costly.

BUSINESS ABROAD BRIEFS

General Motors will enter the baby car sweepstakes in Britain. GM's subsidiary there, Vauxhall Motors, Ltd., has a secret new bantam model and has begun to expand its plant to produce the car.

•

More Canadians: July 1 population of the Dominion was 15,236,000, says Ottawa, an increase of 201,000 in six months, up 2.8% in 12 months. And Canadians earned more: Labor income for the half year was $5.8-billion, a shade above last year. Average weekly earnings in major industries were $58.94 in June, $57.57 a year ago.

•

The President said no to a tariff increase on hand-blown glassware imports. Machine-made glass, he said, is the major enemy of glassblowers, both foreign and domestic; and a tariff boost wouldn't help (page 200).

•

Middle American oil: Guatemala's new government welcomes oilmen; Union Oil Co. of California, already drilling in Costa Rica, is in Guatemala City discussing possible concessions. . . . Nicaragua has O.K.'d an exclusive, three-year exploratory concession to Cuban Oil Basins, Havana.

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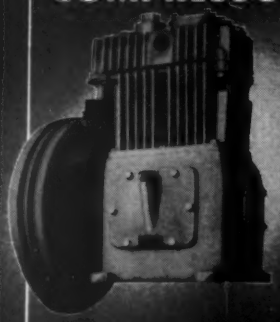

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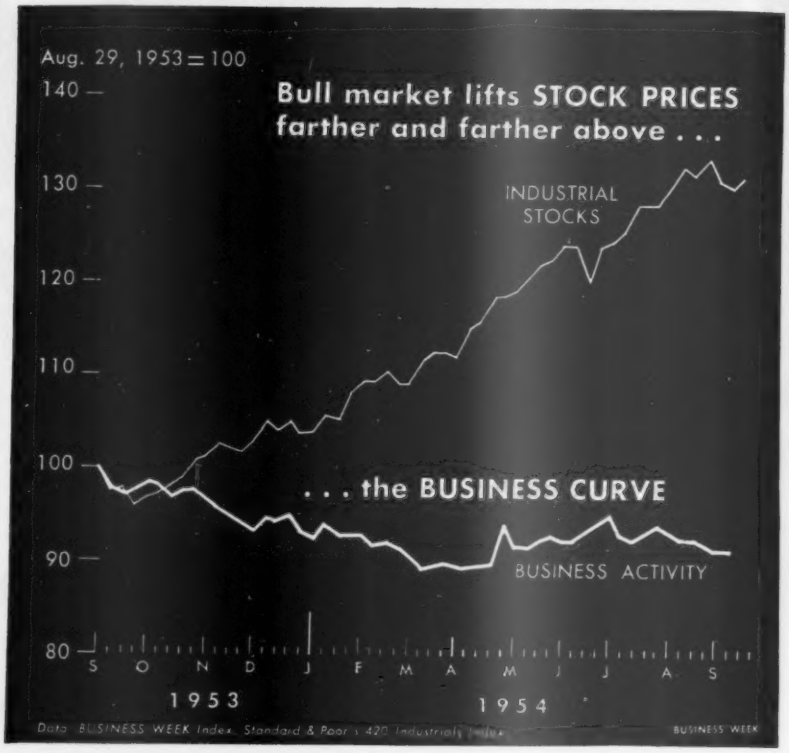


But Bulls Aren't Scared

Success is its own best spokesman. Thus Wall Street's bulls this week could sit back and gloat over the averages:

"See! They've recovered their lost ground. That bobble in the bull market was just a technical reaction. There's no loss of confidence, no reason to think the end is at hand."

If anyone was still unconvinced by this case for the year-old bull market, the reason would probably lie in the way share prices, on the average, have been ignoring the business curve (chart above). Some people may feel that the rise has been based on still unrealized expectations of business betterment.

• **Seven Days**—Basically, the bulls can stand strongly on this argument: The market turned upward on Sept. 1, after seven consecutive daily declines that had carried Standard & Poor's index of 50 industrials down 4.6% from its record level of Aug. 20. By this week, S&P's index had regained all its losses; on Tuesday it climbed to a new high.

What's more, volume increased in the recovery, and Monday's smart rise came on a return to 2-million share volume.

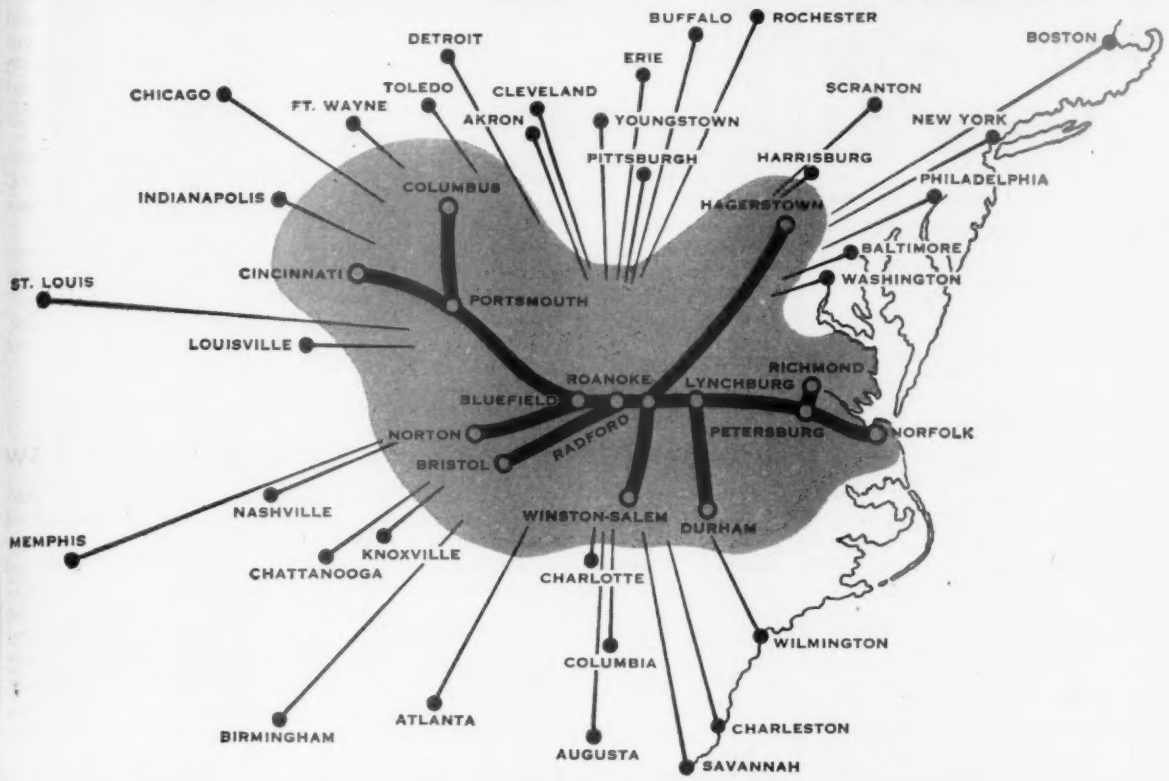
It's true that the tendency since then was increasingly to back and fill rather than to march forward boldly, but you still couldn't take away from the bulls the fact that the shares had mustered strength enough to reach new high territory.

• **Maine Election**—The effects of the Maine election on the market were as obscure as they were in the day-after claims of the rival parties' national chairmen. Shares continued to rise on Tuesday and even at Wednesday's opening, though some of Tuesday's bounce was gone. Wall Street, smiling through its tears at the election had not braked institutional buying.

Oils were prominent in the rise early this week, led by such favorites as Socony-Vacuum, which set a 1954 high, and Standard Oil (N. J.). Close behind came Sinclair, Amerada, Cities Service, Texas Co., and Ohio Oil. The return of the oils to favor seemed based on a belief that the industry's production cutbacks had solved the plague of oversupply.

• **Steel Shares**—Among the issues backing and filling with more than average volume were many of the steels, including U. S. Steel, Bethlehem, and Republic. Big Steel on Monday was the

It's Great to be in the MIDDLE



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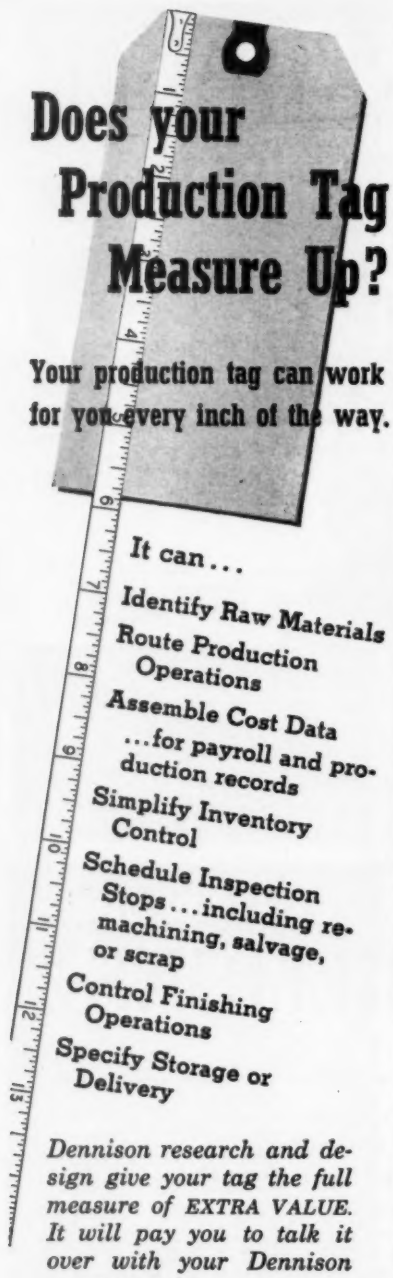
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Route Production Operations
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second most active issue on the Big Board; on Tuesday it was in third place. Investors could note that the mills were running this week at 66.3% of capacity, the highest rate since June though way below the year-ago mark of 91.4%.

The list of market favorites included the chemicals—notably du Pont, Dow, Allied Chemical, Monsanto, and Union Carbide—and such industrial bellwethers as General Motors, General Electric, Westinghouse, and RCA. Twentieth Century-Fox and International Paper were among shares edging upward.

The rails too came in for attention, with the Pennsylvania the most active Monday and Tuesday. Union Pacific, Baltimore & Ohio, Southern Pacific, Denver & Rio Grande, and Canadian Pacific also received a moderate play.

• **Variety**—The price movement of the different industrial groups has been rather varied of late. Hemphill, Noyes & Co. has made a study of the 27 most active Big Board groups since July 30—a group representing 76% of all trading volume. Movie shares were in the van, with a rise of 20.2% in the period. Aviation shares up 15.2%; household appliances 6.7%; coppers 5.2%; oils 4.4%; aviation transportation 4.2%; farm implements 3.2%; investment trusts almost 3%; natural gas 2.6%; and auto parts 2.2%.

In the list of losers were: rubbers 6.1%; electrical equipments 5.2%; textiles 3.7%; papers 1.6%; public utilities 1.35%.

In the remainder of the 27 groups studied, price changes were in a very narrow range.

A shading of prices at the close Wednesday failed to alter bull beliefs about the long-term trend.

July Dividends Sag, Partly Due to Tax Law

Cash dividends in July totaled $526-million, down $50-million from the 1953 month, the Commerce Dept. reported. However, the department pointed out that the Internal Revenue Act of 1954, which allows income tax deduction of $50 plus 2% of dividends after Aug. 1, was largely responsible for lower payments. Many corporations waited until August to allow shareholders to take advantage of the new deductions.

For the first seven months of 1954, cash payments have been $4.8-billion, about 5% over the year ago figure.

Dividends by manufacturing corporations were $2.4-billion for the first seven months, about 3.5% ahead of 1953. Biggest gains in payments were by the chemical, iron and steel, oil refining, and paper industries—the trades that have been spurring the market over the past few months. Largest dips showed up in automotive, textile and leather, and nonferrous metals companies, with many companies in these industries omitting dividends altogether.

The nonmanufacturing corporations showed payments up slightly for the month of July, and they posted an 8% rise for the first seven months.

(In millions of dollars)

Industry group	*July 1954*	*July 1953*	*First seven Months 1954*	*First seven Months 1953*
All manufacturing	$149.9	$200.6	$2,432.8	$2,350.7
Food, beverages, tobacco	31.4	38.7	239.6	236.7
Machinery (except electrical)	19.8	22.9	182.9	184.5
Iron and steel	19.7	19.9	252.5	234.9
Chemicals	18.3	20.2	319.5	290.5
Paper, printing	10.0	10.3	105.1	94.9
Electrical machinery	7.0	29.3	154.0	153.0
Textiles, leather	7.0	10.8	71.5	79.1
Transportation equipment	5.5	9.3	68.5	53.5
Oil refining	4.9	4.8	506.2	489.5
Nonferrous metals	4.1	5.0	81.2	84.2
Automobiles	2.5	2.4	255.9	267.3
Other manufactures	19.7	27.0	195.9	182.6
Finance	130.6	137.0	663.1	629.0
Communications	107.2	104.3	399.3	375.1
Electric light and power	51.7	51.8	406.5	382.6
Trade	48.2	39.2	297.6	258.7
Gas	15.1	14.5	115.7	102.2
Railroads	13.7	14.1	198.2	187.0
Mining	2.3	5.6	209.8	197.6
Miscellaneous	7.1	8.9	78.6	76.1
Total	525.8	576.0	4,802.3	4,559.0

The hotter... the better

Carbon has a peculiar quality—it's at its best when "the heat is on"

IN THE ROARING HEAT of steelmakers' furnaces, molten metals boil and bubble like water in a teakettle.

STANDING FIRM in the intense heat of many of these furnaces are inner walls made of blocks of carbon.

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IN CHEMISTRY, carbon and its refined cousin, graphite, handle hot and violent chemicals that would quickly destroy metal or other materials. Today there are pumps, pipes, tank linings, even entire chemical-processing structures—all made of carbon or graphite.

UCC ... AND CARBON—For over 60 years the people of Union Carbide have pioneered in the discovery, development, and production of many carbon and graphite products for both industry and the home. This is one more way in which UCC transforms the elements of nature for the benefit of all.

FREE: *Learn how* ALLOYS, CARBONS, GASES, CHEMICALS, *and* PLASTICS *improve many things that you use. Ask for "Products and Processes" booklet H.*

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PERSONAL BUSINESS

Tracing your family tree is not the hit-or-miss task you might think. It does demand patience and legwork. If you're willing to give that, you can find many aids and reference sources to keep you on the track.

How you go about getting it depends on why you want your genealogy. It may be important socially—a documented pedigree is necessary for membership in certain clubs and patriotic societies. Or, in many instances, it is needed to prove hereditary rights for the administration of a will.

In such cases time is important. So you should probably go directly to a reputable genealogist, let him do the whole job.

If you're thinking of genealogy as a hobby—and many executives have found it an absorbing one—you'll be far better off to do the digging yourself, at least in the beginning.

Later you may want to hire a professional genealogist to complete the job. But your preliminary work will give him some basic facts and definite problems to be solved. That should not only insure a more satisfactory result; it also will cost you less money. (Minimum charge for a genealogist is seldom less than $3 an hour.)

Before you consult any records, quiz your relatives and get your hands on all the family documents you can find—Bibles, account books, letters, diaries—and samplers, which often give names and dates. Write down full names and sources of information in your notebook; a common surname is not enough to establish relationship.

Next, write or visit a good genealogical collection. Some state libraries and public libraries in large cities have good genealogy divisions. You can find other collections at patriotic and local historical societies, some of which permit members to borrow books by mail. Membership is available for a small fee.

Often you'll find federal and state records indispensable sources. Census records, for example, can fill in a lot of gaps (the first federal census was in 1790). Ancestors who fought in the American Revolution and later wars would show up in federal records, such as pension lists and land grants.

In the libraries, you'll find that American families of English, Dutch, and German origin are the most thoroughly researched. But you can also get good, solid information on family lines that trace through other nationalities. (However, special problems may require that research be done in the country of origin.) And don't overlook the library's store of county and town histories. They can supply you with much information.

Once your search narrows to specific localities, visit the counties and towns where your forebears lived. (Check county borders to make sure they haven't changed over the years.)

Clerks' offices on the spot should hold a wealth of material—school censuses, tax lists, records of wills, and land transactions. Local churches may have records of births, marriages, deaths. Cemetery tombstone inscriptions may help you check your facts.

Some other local records will often illuminate the family temperament. Back issues of the town newspaper may give you an idea of the community's opinion of your ancestors. Old city directories will tell you what business they were in—and on which side of the tracks they lived.

You may find, through all this, that you are entitled to a coat-of-arms. If someone else is already using your family crest, there's not much you can do about it—unless it is registered as a trademark. There is no law of heraldry in the U. S. to keep anyone from using any crest.

However, the rightful heirs to a crest are direct descendants of an ancestor who received a grant of arms (the exclusive right, bestowed by the College of Arms in England, to use a specific coat-of-arms). But those who know of no such ancestor can, under certain conditions, buy a coat-of-arms for around $300 from the College of Arms.

Check carefully any genealogist you hire. Beware of unsolicited letters offering a complete family history for a specified amount. Reliable genealogists usually advertise only in professional and society publications.

—•—

Two hurricanes in the East have underlined how serious the loss of a constant electrical supply can be to the homeowner. Any storm—especially those in the winter time—can bring down lines over so vast an area that thousands of homes are without power for days.

That can bring most households to a standstill; they need power not only for heat and light, and often cooking and water, but for food storage. And a freezer without power means costly food spoilage.

Best protection is a standby home generator. If you are considering buying one, it's all-important to (1) get expert advice on how big a one you need; and (2) have it installed by a licensed electrician.

Many manufacturers will send an engineer to your home, free of charge, to figure out wattage you require. **You'll probably need one of these two:**

- Medium-sized generator (2,500 watts; from about $515 to $525). It will supply power to run an electric stove, some lights, refrigerator, oil burner, freezer, water pump.
- Large generator (5,000 watts; $900 up). This will give you all the electricity you normally use from the power company.

Watch out for "bargain" Army-Navy surplus generators you see advertised. They may have been made for a specific purpose and not usable for your home. Or they may no longer be manufactured—presenting a parts and service problem.

—•—

Check your automobile liability insurance if you live in the New York metropolitan area. You may be one of the 70% of car owners entitled to a premium reduction.

There are some conditions. You must use your car only for pleasure, have youthful operators in the family who drive only occasionally, or be married and have children.

On the other hand, you may be hit with a higher premium—if you use your car for business, and are married with no children.

—•—

Drugs that check the formation of blood clots (anticoagulants) drastically cut the death rate of heart-attack patients. A 680-page report of a special committee set up by American Heart Assn. shows a one-third drop in death rate among 1,031 patients tested.

The eight-year study also noted an even greater drop in the number of complications to which heart-attack patients are susceptible.

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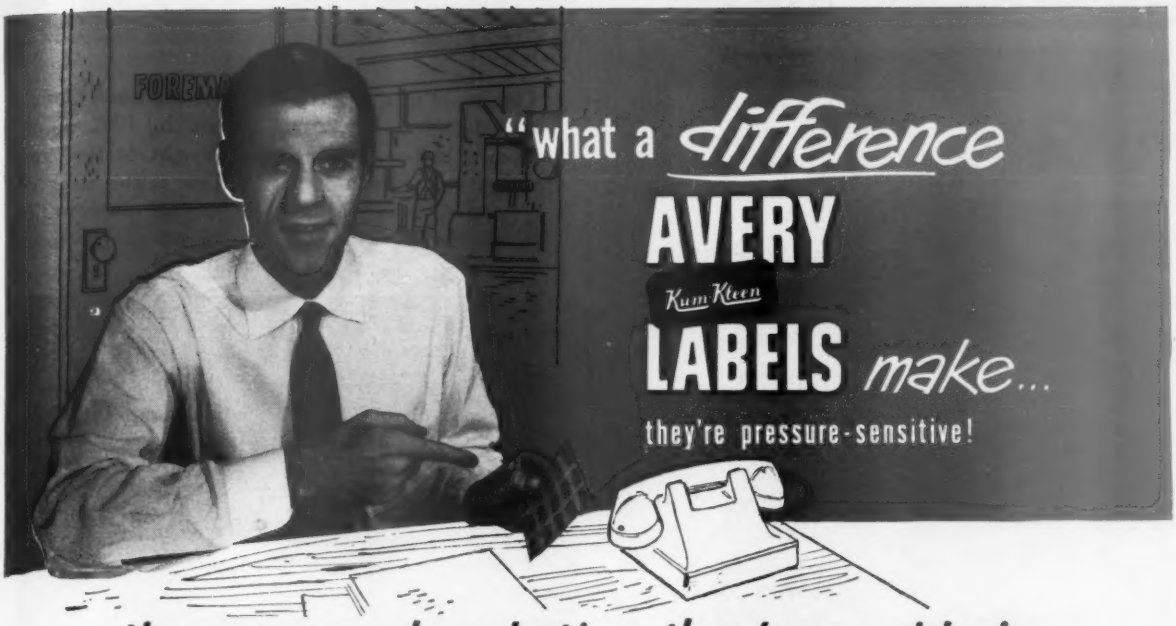


they sure speed production...there's no moistening —no waste motion!"

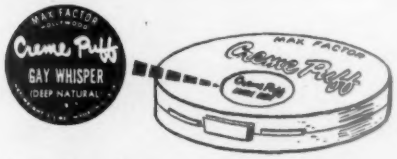
Consider these practical labeling advantages!

■ *All waste motions are eliminated*—for unlike ordinary labels, Avery Pressure-Sensitive Labels are applied dry! An automatic dispenser pops them out—the operator simply *lays* the label in place on the product or package—*without moistening*. That's all there is to it!

■ *Production line speed*—Avery dispensers speed every type of labeling job—whether it's a single item or a thousand. Labels are fed, *one-at-a-time*, ready for instant application. There's no sorting of loose labels...no messy glueing or licking...no soiled, spoiled packages.

■ *They stick, and stay stuck*—Avery Kum-Kleen Labels stick to any clean, smooth surface—*right now*—and will not curl, peel or pop off! That's why Avery Kum-Kleen *Pressure-Sensitive* Labeling is different...it's practical and economical. Write now for details—free sample labels—case histories!

SPECIFICALLY SPEAKING...



Few firms have as efficient production lines as Max Factor Hollywood! One, for example, easily handles more than 25,000 plastic containers in 6 hours. And only two labeling stations, each equipped with one Avery electric dispenser, handle this job quickly and easily.

Yes, Max Factor uses Avery Labels by the millions each month...and for a good reason: Avery Kum-Kleen permits extra high-speed labeling of their quality cosmetic products, *plus* an attractive appearance worthy of the legendary name—*Max Factor Hollywood!* Avery Labels can help you, too...whether you use 30 or 30,000 labels a day. Try 'em—they *are* different!

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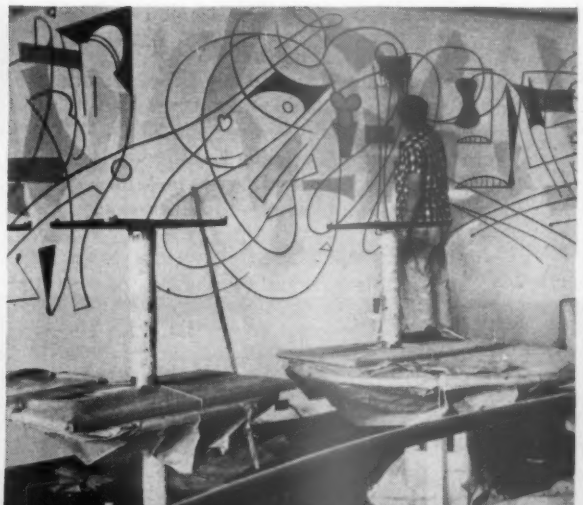
*Our Business Is*_____

HOTEL STATLER shines with glass and aluminum. Its big problem is parking space. Capacity thus far: 15 cars.

This bright new $7-million hotel in Hartford, Conn., was started by the Statler chain in 1952. Last month, Hilton Hotels Corp. bought Statler, and with it the Hartford Hotel. This is the story of a man—Conrad Hilton—and of an industry in which the chains are getting bigger all the time.

ROOMS: The hotel has 455. Small room above is designed for employees of Hartford insurance companies.

SHOPS are in a staggered pattern. This has the effect of making each separate, rather than hunched among others.



BANQUET ROOMS and ballroom are built with movable partitions. Ballroom expands to hold 1,300.

LOBBY is full of space and designed carefully to ward off traffic problems. Steps in the center lead up to lounge, bar, ballroom, and restaurant.

Another Hotel Joins The Hilton Chain

In Hartford, Conn., a large and stylishly tailored hotel opened its doors for business this week. Casual visitors gazed around them in awe. Hotelmen, seeing deeper, found much to think about.

In one way, the Hartford Statler bucks an industry trend. It has not been the custom since World War II to build new hotels. For many reasons, hotelmen have preferred to do their expanding by buying existing properties. The Statler chain, however, has consistently disagreed with the majority opinion. The Hartford Statler, started at the end of 1952, is one of several big luxury hotels put up by the chain during the non-building postwar era.

But behind the hotel itself, monolithic financial arrangements have meekly followed the trend. Last month, the Maverick Statler chain was bought for $76-million by Hilton Hotels Corp. (BW—Aug.7'54,p31). The Hilton chain thus gave generous support to the prevailing theory that it is better to buy existing hotels than build new ones. And when the Hilton chain makes a move, the rest of the hotel industry takes notice.

Hilton is the world's biggest hotel chain. Some 37,000 rooms are under its management. It estimates the sale

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Says James McCabe, Chief Industrial Engineer, American Maize-Products Co., Roby, Indiana

—"Before standardizing on Magcoa Dockboards," says Mr. McCabe, "we tried all types—both heavy-metal and another type of light-metal, 'home-made' and specially made.

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value of its property today at about $200-million.

Furthermore, its president is Conrad Hilton (cover).

• **Silver Spade**—Conrad Hilton has some of the same meaning for hotelmen as Paul Bunyan for loggers. Hilton's purchase of the Statler chain shows that, like Bunyan, he is fond of doing things in a big way. He has managed to achieve almost legendary status while still alive.

A book called The Silver Spade, by Whitney Bolton, will be published next week (Farrar, Straus & Young: $3.75). The book tells Hilton's story, and will be displayed prominently in all 37,000 of the Hilton chain's rooms. It sorts out the facts that make up the legend.

Hilton got his first taste of hotelmanship in his home town of San Antonio, N. M., in early 1907. His father's crossroads store ran into trouble during the economic panic of that year, and Conrad (then 20, oldest of eight children) suggested a solution: Why didn't the family squeeze into one corner of its rambling adobe house and turn the vacated part into a hotel? Conrad's mother and sisters would do the cooking; Conrad himself would be room clerk, bellhop, and manager. The plan worked well.

Young Hilton did not decide then and there to be a hotelman. His true ambition at that time was to own a bank—or, preferably, a chain of banks. But the hotel business collared him anyway. Discharged from military service after World War I, he went to Texas to look for a bank and found a hotel instead. It was in Cisco, Tex., right on the edge of a booming oil development. He bought it with his $5,000 savings. The magnetism of oil did the rest; room occupancy stood at 100%, and Hilton's savings came back to him fast.

Within a few months he was looking for other hotels—specifically for old, shabby hotels that could be bought cheaply and then polished up. He found some, and soon had a modest chain of them. Under his management they became clean, efficiently run, and profitable.

• **Big Time**—Presently Hilton began to dream of building his own hotel. The first new Hilton opened in Dallas on Aug. 4, 1925. It cost $1-million.

The 1920s were the big years of U. S. hotel construction. Hilton did not stop with the Dallas hotel. In that decade, he built six more hotels in Texas.

Then the Depression fell on him. Room occupancy dipped to around 50%. Hilton figures the Depression set his career back by 10 years; it did heavy damage to the business he had been building up.

But in the late 1930s Hilton was back on the tracks again. In 1938 he took the first step toward giving his business nationwide scope. He bought his first hotel outside the Southwest—the 600-room Sir Francis Drake in San Francisco (which he later sold). In 1941 he bought the 350-room luxury Town House in Los Angeles. Since then his operations have reached throughout the country. Among Hilton acquisitions have been such big, well-known hotels as the Waldorf-Astoria in New York and the Stevens (now the Conrad Hilton) in Chicago. The Conrad Hilton, with 3,000 rooms is the world's biggest hotel.

• **Overseas**—National scope was not big enough for Hilton, however. In 1942, he began to go international.

A Mexican family came to him in that year with a proposition. The family proposed to build a hotel in Chihuahua, Mexico. Would Hilton operate the hotel? Hilton would. Thus the Palacio Hilton went into business, and Hilton himself began thinking about foreign operations.

Hilton International Corp., a wholly-owned subsidiary set up to handle the chain's overseas business, now manages three foreign-owned hotels. Five more are being built, eventually to be put under Hilton International's management.

• **Distribution**—Hilton's latest and biggest move, purchase of the Statler chain, spreads Hilton's vast network still farther. The Hilton chain previously had hotels in 11 U. S. cities. With the Statler hotels, plus the newly acquired Shamrock Hotel in Houston, the total is now 18.

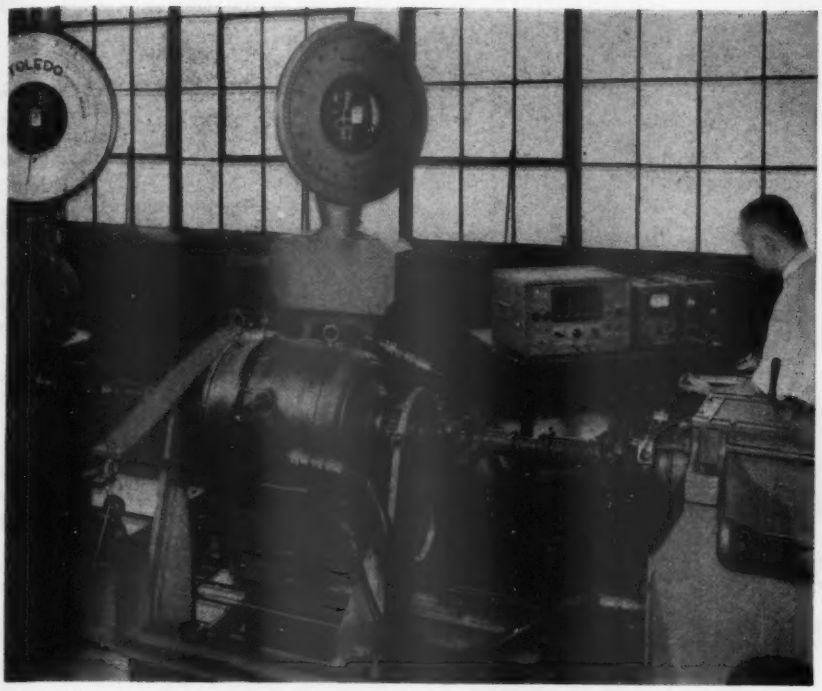
Hilton's heaviest concentration is in New York City, where the chains owns or operates five hotels. Los Angeles is next with three; then come Chicago, Washington, and St. Louis with two apiece. The remaining 13 cities in the chain's network have only one Hilton hotel each.

• **More Links**—The growth of the Hilton chain over the past years is probably the most dramatic in the industry because the chain is the biggest. But other chains have grown fast, too. The 1940s and 1950s have been packed with hotel mergers and acquisitions.

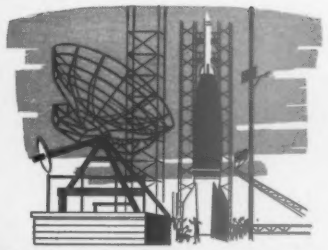
According to the American Hotel Assn., there are about twice as many chains (operating three or more hotels) now as there were in 1932. And the number of units in chains has more than tripled, from 475 in 1932 to 1,600 today. The average chain in 1932 had 5 hotels; today, 8½.

These chains may have all kinds of personalities. Hilton, for instance, specializes in big hotels located in big cities. So does Sheraton Corp. of America, runner-up to Hilton in estimated value of property. Sheraton has just bought the lease on the

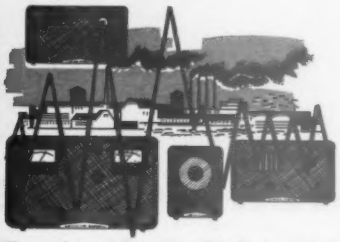
Your business is in the Age of Electronics



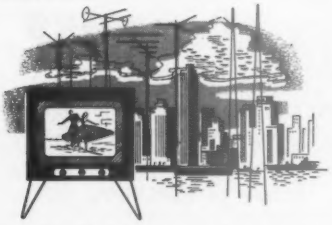
Modern measuring. Twin Disc engineers connect a Hewlett-Packard electronic counter to magnetic pickups. Pickups are actuated by gear teeth on torque converter shafts. Counter shows speed ratio instantly, accurately, in direct-reading digital form. In many counter applications, non-technical personnel make precision measurements without special training.



Radar, sonar and other electronic military achievements were made possible by accurate, dependable electronic test instruments. Now, advanced models of these same instruments are invaluable in rocketry, nuclear physics and research into interstellar phenomena.



Throughout science and industry, electronic test instruments make routine measurements faster, more accurately; increase knowledge by opening the door to measurements once not possible. Electronic test instruments work by measuring or comparing electrical impulses from natural or man-made sources.



Your TV picture is clear and steady, and color TV is now at hand, thanks to electronic test instruments. TV set makers use instruments to design better circuits, speed manufacturing and improve testing. Broadcasters use them to monitor equipment performance and maintain transmitters and microwave networks in perfect operating condition.

Twin Disc...another leader uses electronics for better engineering and manufacturing

Once the best way to determine torque converter efficiency included a "cut and try" method of speed ratio measurement. This involved constant adjustment, many tachometer readings and much arithmetic.

Today, engineers at Twin Disc Clutch Company read speed ratio directly, instantaneously and accurately with Hewlett-Packard electronic counters, oscillators and voltmeters. These and other electronic test instruments—in simple, portable setups—save Twin Disc hours of time in engineering as well as on the production line and in quality control.

Hewlett-Packard designs and manufactures the world's most complete line of electronic test instruments—over 250 different types of measuring equipment used by manufacturers and processors, in scientific research, in radio, TV and communications, and by the armed forces.

Correct application of such equipment is of prime importance. *-hp-* field engineers can tell quickly whether *-hp-* equipment can help answer your manufacturing or research measurement problems. A letter outlining your measuring requirements will bring a prompt reply.

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HERE COMES 30,000 lbs. OF SCRAP... handled in a one-man load, handled over-the-road by the ROSS Carrier!

Most people don't think of industrial scrap handling as a unit-load proposition. It's usually a pretty messy operation—scrap merely dumped on any empty spot in the yard. But Central Iron & Metal Company, Battle Creek, Michigan, has put scrap handling on a fast, efficient basis simply by capitalizing on the unique advantages of the Clark-Ross Carrier.

Central Iron & Metal provides their suppliers with fabricated collection boxes or "gondolas". These vary in length from 10 to 20 feet; some have a gate at one end to allow a man to roll in a wheelbarrow and dump the load of scrap. The Clark-Ross Carrier delivers an empty gondola and picks up a "full" at each of the plants served. The Carrier speeds back to the scrap yard, drops the "full", then takes off on another call. Neither rain nor snow can stay these swift Carriers from the completion of their appointed rounds!

Central operates two 30,000 lb. Carriers. They're fast on the road (up to 40 mph) and fast on the load—takes only 3 seconds to pick up or drop a load. Central's customers like the system because of the "good housekeeping" factor. Central likes it because it's fast and inexpensive—a one-man operation which may cover several hundred miles a day.

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". . . chains, confident of their abilities and finances, are willing to buy . . ."

HILTON starts on p. 186

Astor Hotel in New York, thereby bringing its chain total to 30 units and 18,000 rooms.

Another type of chain is Milner Hotels. Milner owns or operates 203 hotels in 158 U.S. towns and cities—more than Hilton on both counts. But Milner's preference runs to relatively small hotels, not in the main stems of big cities.

Its room total is 23,000, well under Hilton's; and its estimated asset value $7-million—a fraction of Hilton's.

But Milner Hotels is like Hilton and Sheraton in one respect: It is growing—and growing not by building new hotels, but by gaining control of existing ones.

Milner is now becoming owner or manager of hotels at the average rate of one a month.

• **Theory**—Why the emphasis on existing rather than new hotels? There are several factors in the picture:

• The hotel business is a tough one these days (BW—May1'54,p116). Many operators of single hotels, lacking the experience and deep resources of the chains, are willing to sell out at bargain prices. The chains, confident that their abilities and finances can turn an unprofitable hotel into one worth having, are equally willing to buy.

• Motor courts have been springing up everywhere. They have drained away what might, in other circumstances, have been a demand for more hotels.

• Even if there were no motels and there were an apparent demand for more hotels, the big chains would still prefer to buy existing hotels wherever possible. When a chain moves into a city and buys a hotel already standing and operating there, it does not increase the number of rooms in the city. It does not risk starting a rate war. Furthermore, it buys something tangible; it knows, to a very large extent, what it can expect of the hotel in the future. The gamble is much greater with a new hotel.

• Construction costs are high. According to estimates of Horwath & Horwath, hotel accountants, the Hartford Statler cost a little over $15,000 per room (including land, furniture, actual construction costs, and other expenses). By contrast, Hilton was able to buy the Statler chain—made up of relatively new, well maintained hotels—for about $7,500 per room.

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You can reasonably expect Nylon cord to give your tires a valuable increase in body strength. But how about traction, toughness of the tread compound, efficiency of the tread design and body contour, strength of the bead?

If you want top tire performance and economy, Kelly-Springfield recommends that you demand *all-around* quality in the tires you buy, superiority in *every detail* of tire construction.

Another thing to reckon with is the plain fact that Nylon costs more than other types of body cord—in the case of the new Nylon Kelly Super Armor Trac, for example, 15% more.

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—nearly twice the carcass strength, ply for ply, that you get from ordinary cord fibres. On a weight basis the Nylon used in these Kellys is even stronger than steel.

—a tremendous increase in resistance to bruises, flex fatigue, moisture and heat damage.

—invaluable extra protection against tire failure accidents, far greater safety for driver, truck and load.

—far more recaps. Extra mileage that only costs about one-third as much as "first rubber" mileage.

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Finally, if you want to know what to expect from Nylon, "look at the record."

Kelly will be glad to show you actual testimonials compiled from truckmen in operations similar to yours. We can show you how Nylon compares dollar-for-dollar, mile-for-mile with other body cord materials. And, equally important, you'll see how the various brands of tires compare in actual performance tests by using our Mileage Record forms . . . ask for your free kit NOW!

You'll see, too, why Kelly welcomes and encourages this kind of comparison test. Why not write and find out how much more you can expect with Nylons — Kelly Nylons — or, better still, let a Kelly Dealer give you the facts at first hand.

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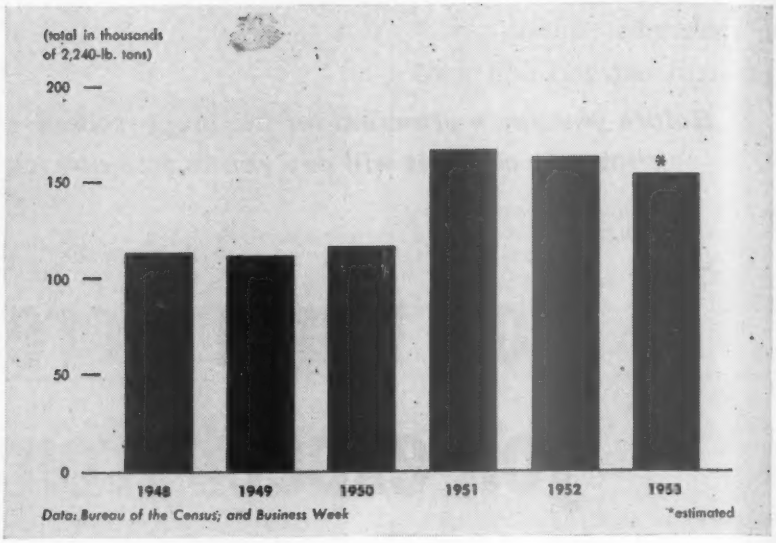

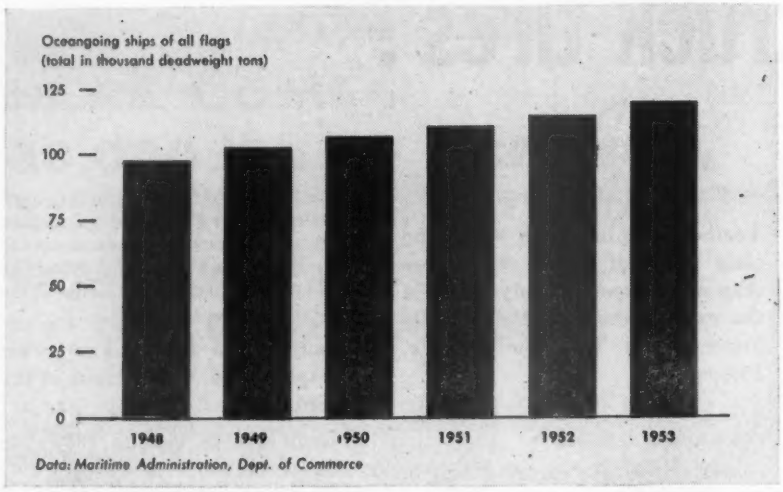

...and world ship tonnage continues to increase, so...

U.S. Shipping Fights for Breath

The U.S. merchant marine is winning battles in Congress and losing them in the seaports of the world. Nothing is new about this but the legislative victories.

One of the last bills that Pres. Eisenhower signed this month provides for government insurance of mortgages on merchant ship construction. With the bills passed and signed earlier, it makes 1954 the best legislative year for the merchant marine since before the war. However, shipping men privately concede that the best is none too good.

A few companies may take advantage of the government mortgage guarantees for new ships, they say, but not enough to give shipbuilding a real boost. There just isn't enough business available to U.S. operators for that.

• **Too Many Ships**—World ship tonnage has been climbing steadily since the war (chart, right) while cargo business has turned downward (chart, left). The trade peak came when government shipments, in foreign aid and in Korea mobilization, were humming.

For U.S. ship lines, the surplus of ships in relation to cargoes is only part of the trouble. The biggest pain in the head for American operators is the chronic problem of high operating costs that knock them out of world competition.

Even when worldwide business is pretty good, and foreign-flag ships are earning profits, U.S. shipowners can't break even. They have to pay their seamen twice to four times as much as other nations do; food, insurance, and maintenance costs also run higher for American lines. When competition for cargoes is stiff, U.S. operators are the first to be frozen out, of course.

• **Rate Squeeze**—Today, oceanborne freight rates are less than half of 1951 levels. The operator of a Liberty tramp steamer under a Panamanian flag may be eking out a profit of $30,000 a year, but chances are a U.S.-flag operator won't even be trying. The rates are well below his breakeven point. Hence, only 50 of the 150 U.S. Liberty ships that were operating in the postwar peak are still at sea.

A slight upturn in rates in the past couple of weeks is regarded as merely seasonal, nothing for shipping people to get excited or even hopeful about.

Tanker men have particularly sour troubles. World petroleum markets have slumped, and tanker rates have dropped to the point where some U.S. tanker owners are losing $10,000 a month. There were weeks last spring and summer when not a single U.S.-

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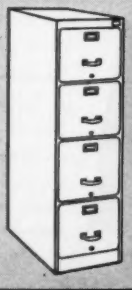

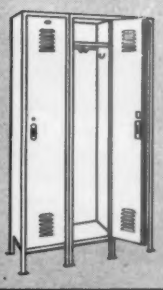

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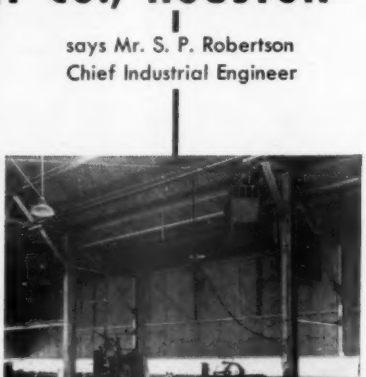

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nag tanker got a charter. Things have picked up a bit in anticipation of the home heating season, but no one expects any important rise in tanker rates.

Still, tanker owners are reluctant to lay up ships. They made barrels of money into 1952, and some are still living on that fat. Others figure there may be a real upward swing again. To lay up a ship and bring it out again costs maybe $50,000. So an owner can lose $10,000 a month for five months without being worse off.

"The only thing that could pull us really out of the hole would be a war," a tanker man remarked, "but who wants that?"

I. Losing the Lead

Wars have always cued the feasts and famines of the U.S. merchant marine.

When the Civil War broke, American clipper ships had no match as carriers of high-value cargoes all over the world. During the war, though, other nations seized the advantage with their new steamships. The excellence of our clipper ships then trapped U.S. shipowners into clinging to them too long. From about 1870 to World War I, we had only a shrunken deep-sea trade.

• **Between Wars**—As soon as the U.S. entered the first World War, we started a gigantic shipbuilding program. Not a ship was delivered, though, until after the Armistice. Completions came so fast then that by 1920 the U.S. had 30% of the world's oceangoing tonnage. That was too much. The government tried to interest private capital by setting up shipping lines, without much success. Foreign operators recaptured much of their trade; immigration restrictions cut passenger business to almost nothing.

In 1936, the Administration and Congress saw ominous signs in Europe and noted that the U.S.-flag fleet was pale and spindly. To avoid being caught fleetless again in time of war, Congress passed the Merchant Marine Act of 1936, setting up a construction and operating subsidy program for shipowners who would operate over essential routes.

This program was just beginning to pay off when World War II broke out. Then an all-out construction program was launched. By 1943, more than four ships a day were coming down the ways, mostly 9-knot Liberties that were obsolete before they hit the water—but were cheap and easy to build. In 1943-45, U.S. yards built more than 4,500 tankers and dry-cargo ships.

• **Aftermath**—When the war ended, the best of the freighters and most of the tankers were sold to private interests and to other countries. The rest—1,400 Liberties and 600 other ships—

are still in the reserve fleet, mothballed in convenient rivers and harbors. Some came out briefly during Korea and the coal-wheat lift to Europe, when tonnage was needed and rates were high.

About 75% of the active U.S. private fleet was built during the war. Only about 15% of the tonnage was built after the war. Figuring the useful life of a ship at 20 years, this means 1963 through 1965 should be great years for U.S. shipyards—if they last that long and if U.S. operators find the money somewhere to pay for replacements.

• **A Crumb for Shipyards**—The new mortgage insurance act may be a small shot in the arm for shipyards. Subsidized shippers are pledged to replace their vessels when they get to be 20 years old, and the law may help them do it.

But Congress and the Administration turned down a more ambitious proposal for government financing of 60 new ships a year for 20 years.

The idea is to keep U.S. shipyards operating—even if they can't compete with foreign yards—as a safeguard against another emergency. Unless they get help, American yards can't keep their gates open. During 1953 they didn't get a single new contract, and they had several canceled. This year has been almost as bad.

Now Congress has appropriated $44.5-million in construction subsidies for four new passenger lines, $11.1-million to refit four reserve Liberty ships with experimental cargo-handling devices and power plants (a steam turbine, a geared diesel, a gas turbine, and a combination of a free-piston engine with a gas turbine), $30-million for new Navy tankers, $12-million for emergency repairs to the reserve fleet, and $26-million for a trade-in deal for tankers (the government buys two old tankers for the reserve if the shipowner agrees to build a new tanker).

Another bill also allows the Navy to offer up to 15 10-year charters to operators who build supertankers. So far, though, there don't seem to be any takers—the rates approved by Congress aren't high enough.

II. Subsidies or No

Maritime people are delighted with this year's Congressional program as far as it went. They think it will improve the quality of the fleet, ease the impending problem of obsolescence. But no cure is in sight for high operating costs—so high that it takes a boom to make a profit.

There's no unified attack on the problem, either. The industry has many different trade associations.

Congress takes only sporadic interest in the merchant marine. There aren't enough votes to create a maritime bloc of any importance.

• **Operating Subsidies**—The government pays two main types of subsidy: one to help make up the extra cost of construction in U.S. yards, the other to compensate for extra cost of operating under U.S. rules, with U.S. labor.

Having an operating subsidy doesn't automatically assure profits. Just recently the New York & Cuba Mail Steamship Co. asked a six-month trial suspension of its operating subsidy. It wants to see if it can't do better by laying up its U.S.-flag ships and chartering foreign ships instead.

On the other hand, some nonsubsidized lines haven't been doing too badly—Isbrandtsen Co., Inc. (BW—Oct. 17'53,p114), for example. Many of these lines think they ought to get government aid, but they don't want to sacrifice any of their freedom to get it.

• **Tramp Ships**—Tramp operators would like to get a wage differential subsidy, at least. And they would like to see Congress approve rate-making agreements, to eliminate cutthroat competition.

Tramps are hit hardest in any drop in cargo tonnage—they're marginal. Lately, they have been losing business to company-owned fleets, especially in the iron ore haul for Liberia, Venezuela, and Labrador. At the same time, they are helped by the federal requirement, recently renewed, that at least 50% of U.S. foreign aid cargoes be carried in U.S. ships. They would like to see this written more permanently into the law and extended to all government cargoes.

• **National Policy**—One veteran U.S. tramp man feels things would be better if such flags as Panama, Honduras, and Liberia were ruled off the seas. "Force these people to operate under flags of legitimate maritime countries," he says, "and they wouldn't be able to cut rates so low." Unions agree.

In contrast, some people go so far as to say that the U.S. cannot economically justify a merchant marine. They think it would be better economics to have an internationalized fleet in which we built the ships, with crews and supplies coming from other countries. Such proposals don't give any weight to national pride.

Nor do they offer any substitute for the lure of the business itself to even a hardheaded businessman. A shipowner puts it this way: "What other business do you know where the president of the company gets up at 5:30 in the morning just to see one of his ships steam into the harbor—not to do anything, just to watch. People will die happier of starvation in shipping than of gout in something else."

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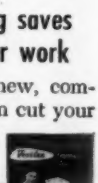

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Crowding In on Oil

● **Natural gas is causing worry to oil marketers as it eats away at market after market once in oil's domain.**

● **LPG has moved in, too, though its competition, mainly confined to farms, has hurt less.**

● **Solace to oilmen—but not consumers—is that gas gradually is losing its price advantage, which may slow trend.**

Natural gas, once the unwanted stepchild of the oil industry, is fast becoming a problem child for oilmen. What makes it so is the way natural gas has been grabbing off markets traditionally served by oil.

The signs of this are almost countless:

• In Philadelphia, in the heart of a large refining area, oil companies lost some 4-million bbl. a year in sales of No. 6 fuel oil in a recent two-month period. Natural gas took the business.

• Among electric utility plants, gas consumption in the first four months of this year was up 18.1% over the same period in 1953. Against this, oil consumption was down 15.2%.

• In New England, where gas has come in only in the last few years, consumption for housheating in 1956 is expected to be almost four times what it was in 1952.

• Over-all, the number of gas-housheating customers in the country right now is 188% greater than 10 years ago. By 1956, it's estimated that there will be 15.1-million housheating customers, compared with 10.9-million in 1952.

Even in areas not yet served with natural gas, oil marketers are worried. The Pacific Northwest, for instance, is one of the few areas still without gas. But that situation will change soon. The Federal Power Commission has given a green light to Pacific Northwest Pipeline Corp. to build a line that will link the San Juan Basin area and the Northwest (BW—Oct.25'52, p178).

This pipeline, expected to be finished in 1955, will start off by bringing 279-million cu. ft. of gas a day into the area; by 1958, it will be delivering 563-million cu. ft. daily. The threat it poses to oilmen is obvious.

Henry Gellert, president of Seattle Gas Co. of Seattle, has predicted that within three years after the completion of the new line, gas will be undersselling fuel oil. Speaking for petroleum men, one oil trade-group official has said that oil marketers in the area will probably lose at least 10-million bbl. of residual oil business a year to gas, some 115-million gal. of light oil sales. Even at the producing level of the oil industry, the tremendous growth of natural gas has had its effects. A short while ago, T. S. Petersen, president of Standard Oil Co. of California, and R. G. Follis, its chairman of the board, sent a letter to the Texas Railroad Commission in which they talked about the impact of natural gas on the oil business. The two pointed out that while imports of crude oil and products have been blamed for cutbacks in Texas production allowables, imports weren't really at fault. The villain, they said, was the enormous increase in natural gas utilization since 1947.

• **Surprise**—The spectacular growth of the natural gas industry has surprised many in the oil business. In fact, news that natural gas is now taking away markets from oil seems ironic to oilmen.

Twenty-five years ago, natural gas was one of the banes of an oilman's life. If he hit gas in his search for oil, he usually threw up his hands, capped the well, and started drilling some place else. This was so much the pattern that when the big Amarillo gas field was discovered, drillers moaned their misfortune.

As late as 10 years ago, millions of cubic feet of gas were burned in the field each day because there simply was no market for the fuel. That seems like almost another age to oilmen today.

• **Demand Unlimited**—Since 1946, marketed production of natural gas has doubled. More important, though, is the fact that many gas officials see an unlimited demand for gas in the next 10 years. Right now, most gas utility companies have long waiting lists of people who want service. One company in Ohio, for instance, says it has 70,000 homeowners for future heating installations. In Chicago, a utility has more than 135,000 names on file from those who want to heat with gas. The reason for all this clamor, of course, is that gas is underpriced in relation to oil and coal and that it has the added advantage of being a clean and convenient fuel.

• **Cheap**—The price of natural gas today

Markets

is substantially what it was in 1939. Against this, the cost of its competitors—coal and oil—is roughly twice the pre-war level. The average price of gas in the field is 8¢ per 1,000 cu. ft., a figure that takes into consideration both old long-term contracts made for 3¢ to 4¢ per 1,000 cu. ft., and newer contracts that call for gas at 20¢ a thousand. Put another way, you can buy for 48¢ enough natural gas to be the heating equivalent of one barrel of oil (roughly 6,000 cu. ft. of gas have the heating equivalent of one barrel of oil). Yet the oil would cost you about $2.90.

The price of gas in the field, of course, is not an accurate yardstick of what the ultimate consumer pays for it, since transportation and distribution make up the bulk of the final price. Still, in most areas, gas prices are considerably under those of oil. In Philadelphia, for instance, gas undersells oil by 20¢ to 25¢, figured on a barrel basis.

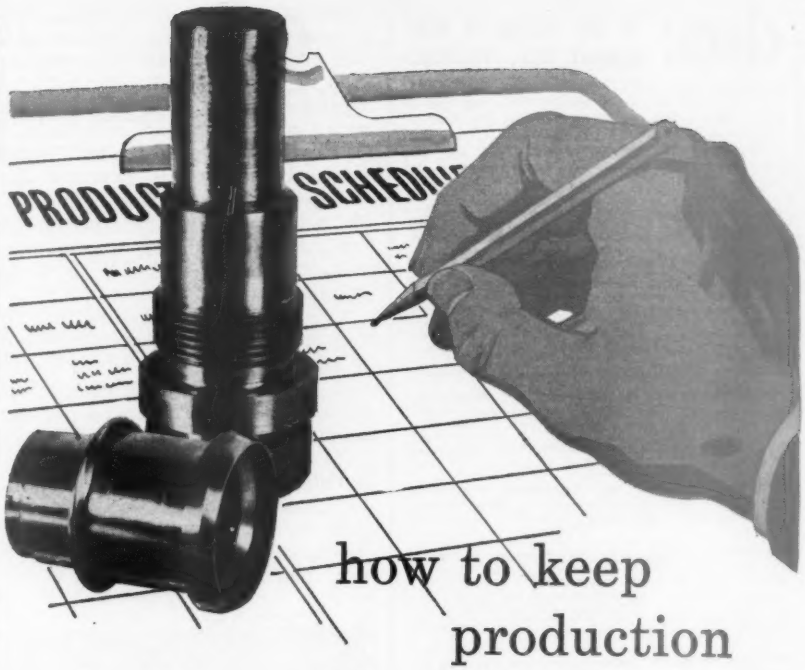
As yet, there is no sign that depletion of gas reserves of itself will narrow this spread. Despite record demand, supplies of natural gas are at an all-time high. At the end of 1953, the American Gas Assn. figured that proved reserves amounted to about 22 years' supply on the basis of 1953 production. Oil reserves, on the other hand, were equal to 13 years' production at present levels.

• **LPG, Too**—The result of all this, of course, is that two almost completely interchangeable products of the same industry are competing with each other at the marketing level. What makes the situation even more interesting, though, is the fact that oil is also having to compete with LPG (liquid petroleum gas) which, itself, is usually a byproduct of natural gas.

Most liquid petroleum gas (mainly propane and butane) comes from the rich hydrocarbons that are stripped out of "wet" natural gas when it comes from the well. The "dry" gas is usually sent along to a natural gas pipeline, while the LPG products are liquefied, bottled under high pressure, and shipped to market.

The growth of the LPG industry has been almost as spectacular as that of natural gas. During the first four months of 1954, LPG production totaled some 684,000 bbl. a day, and year after year there has been an increase of 10% in sales. In 1953, some 5-billion gal. of LPG were marketed.

LPG, used mainly in rural areas, has already taken away some lush farm markets from gasoline and oil. An estimated 165,000 tractors right now are equipped to use LPG, which costs 4¢



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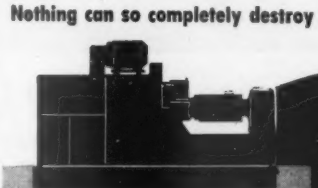

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to 7¢ less a gallon than gasoline. The Chicago Transit Authority has some 950 LPG-powered buses in operation. And at least one railroad—the Union Pacific—is known to be experimenting with a propane-fired turbine locomotive.

The big problem in the LPG industry has been to get its operations off a feast-or-famine basis. The business, in the past, has been plagued with either too much LPG—during the summer—and not enough in the peak winter months.

One solution to the problem is to provide better and cheaper distribution of LPG on a year-round basis. To this end, most suppliers are working toward the setting up of underground storage facilities. Another way out is to send LPG to market by pipeline.

• **Future**—At the moment, though, LPG competition represents only a pinprick to the oil industry. The main problem is what to do about competition from natural gas.

The best thinking among industry economists today is that pressure from natural gas seems more acute now because the over-all demand for energy has slacked off, and oil supplies, on the longish side, are having to hunt new markets. In the long pull, the feeling is that though gas will grab off substantial markets, there will still be plenty of room for oil to make gains.

Ultimately, oil economists look for the price of natural gas to increase until it reaches the level of other fuels on an energy basis. It's already apparent that gas's tremendous price advantage is dwindling. The field price of Texas gas rose roughly 13% last year; in the past six years there has been a near doubling of prices in the field. This trend is likely to continue. New contracts being signed between gas producers and pipelines call for substantial price hikes; many carry escalator clauses providing for automatic stepups in the future.

Telecasting Equipment Goes South

Saturation in the telecasting equipment market in the U.S. may be a long way off, but the Allen B. Du Mont Laboratories is getting itself ready by developing the South American market. Last week (above), Du Mont shipped a new telecruiser—a mobile TV station—to Bogota, Colombia, to be used on the nation's first station, HJRN-TV. The station, which opened in June, is government-sponsored, and there are plans to extend operations nationwide. So far, Du Mont has shipped $300,000 in TV equipment to Bogota. It also has considerable equipment in Brazil, and later this month will ship an additional $180,000 worth to Radio Tupi-TV, Rio de Janeiro.

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The Manila Pact

The United States can be proud of the two documents—the Southeast Asia Collective Defense Treaty and the Pacific Charter—that were signed last week in Manila. No better answer could be found at this moment to Communist military ambitions and Communist charges that we are trying to reimpose colonial rule in Asia.

Although the defense pact, known as SEATO, lacks the unified military forces of NATO it does provide for joint military action. It pledges the U. S., Britain, France, Australia, and New Zealand to defend the Philippines, Thailand, and Pakistan and to block any further Communist military aggression in Indo-China.

This is a good start toward a system of collective security in Asia. Given the mood of neutral nations like India and Indonesia, it is all that Secy. of State Dulles could possibly achieve right now in military defense.

At least as much was achieved at Manila in laying the groundwork for a joint effort to promote economic progress and social stability. The signatories have pledged themselves to help each other in this field.

By helping to create economic well-being in Southeast Asia, the U. S. will do more than strengthen the resistance to Communism. We could well convince Burma, already fearful of Red China's ambitions, that it should join SEATO. In time, perhaps even India and Indonesia will see that their fears of Western colonialism are empty.

But our job in Asia has only started with the pledges we have made in Manila. If they are to mean anything, the U. S. will have to shoulder added financial burdens—and new problems. We are certain that some new way must be found soon to speed economic development.

The Pacific Charter, which proclaims the principles of liberty, justice, and equal rights of all peoples, should help to achieve the same purpose. It commits the West to liquidate the last remnants of colonialism in Asia.

It is appropriate that this charter, and the defense pact, should be signed in Manila, with the Philippines as an independent signatory. Here in this nation is proof, if any were needed, that the United States is committed to the defense of freedom against both 19th Century colonialism and the new Communist brand of imperialism.

The Average Rises

Pres. Eisenhower has turned down the Tariff Commission's recommendation for increasing the import duty on foreign handblown glassware. This decision follows on the heels of his rejection of another Tariff Commission suggestion to increase lead and zinc duties.

These moves are good news to our allies as well as those Administration supporters who are free trade enthusiasts. All too many of them had hastily assumed that the hike in the Swiss watch tariff earlier in the summer would mean that there could be no holding back protectionist sentiment.

The fact is that the more enthusiastic and vocal advocates of tariff reduction discourage too easily. In his period in office, the President has rejected Tariff Commission recommendations to raise duties on five occasions. In only two cases, Swiss watches and alsike clover seed, has he followed the Commission's suggestion and raised tariffs. This compares very favorably indeed with his predecessor's record of three rises and two rejections on tariffs.

It is, of course, true that many of the major goals in the Administration's foreign economic policy have yet to be enacted. The President has pledged that they will have very high priority before the new Congress. But elimination of tariffs in one fell swoop has never even been considered. Such an act would create more distress and difficulties than maintaining the present structure.

In dealing with the tariff problem, the President has judged each case on its merits. Consequently he has more than held onto gains achieved in the past two decades. With the President holding to this logical and courageous course in the face of the pressures involved, we feel confident that greater gains will be made in the future.

The Majority Leader?

The operation of the American government, with its separation of powers and its constitutional nuances, is difficult for most of our friends abroad to understand. But confusion and misunderstanding is not limited to our friends abroad in the case of the Majority Leader of the U. S. Senate.

The official position of Majority Leader is one of the most exalted in government. He is the acknowledged spokesman for the Administration in the Senate, the man who is responsible for party discipline, the man above all, who is charged with the duty of getting the Administration's bills through the legislature.

In view of this great responsibility, it is bewildering to learn that the present Majority Leader, Sen. William F. Knowland, apparently acting on his own, demanded that the President break diplomatic relations with the Soviet Union over the shooting down of a Navy patrol plane. Knowland released this demand to the press before it reached the President.

We believe that Knowland has a perfect right to take this position, even though it is not the view of Pres. Eisenhower. There is nothing to stop anyone from making his views known to the President himself.

But sending a public wire to the White House is the time-honored procedure of political opponents and pressure groups. It is hardly consonant with Knowland's high position, because he can, at any time, privately consult with the President. In fact, that is part of his job.

This is not the first time that Knowland has publicly differed with the Administration. Ever since he has been Majority Leader, he has shown a distressing capacity for opposing the Administration, especially in foreign policy. This is a fitting quality for a Minority Leader, but it is highly inappropriate in the post Knowland now occupies.